

ORAL ARGUMENT NOT YET SCHEDULED

No. 23-1069 (consolidated with No. 23-1071)

**IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

HEALTHY GULF, *et al.*,
Petitioners,

v.

FEDERAL ENERGY REGULATORY COMMISSION,
Respondent,

COMMONWEALTH LNG, LLC,
Respondent-Intervenor.

On Petition for Review of Orders of the
Federal Energy Regulatory Commission

JOINT APPENDIX**VOLUME I OF I**

Counsel listed inside front brief cover

Dated October 20, 2023

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181 FERC ¶ 61,143
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Richard Glick, Chairman;
James P. Danly, Allison Clements,
Mark C. Christie, and Willie L. Phillips.

Commonwealth LNG, LLC Docket Nos. CP19-502-000
CP19-502-001

ORDER GRANTING AUTHORIZATION UNDER SECTION 3
OF THE NATURAL GAS ACT

(Issued November 17, 2022)

1. On August 20, 2019, as amended July 8, 2021, Commonwealth LNG, LLC (Commonwealth) filed an application under section 3 of the Natural Gas Act (NGA)¹ and Part 153 of the Commission's regulations² for authorization to site, construct, and operate a natural gas liquefaction and export facility, including an NGA section 3 natural gas pipeline, in Cameron Parish, Louisiana (Commonwealth LNG Project). The Commonwealth LNG Project will be located on the west side of the Calcasieu Ship Channel, near the entrance to the Gulf of Mexico. For the reasons discussed in this order, we will authorize Commonwealth's proposed project, subject to the conditions discussed and attached herein.

I. Background and Proposal

2. Commonwealth is a Texas limited liability company, with its primary place of business located in Houston, Texas, and is authorized to do business in the State of Louisiana. Commonwealth is a wholly owned subsidiary of Commonwealth Projects, LLC, which is in turn wholly owned by a private individual, Paul Varello.³

3. The proposed Commonwealth LNG Project consists of: six liquefaction trains; six liquified natural gas (LNG) storage tanks; one marine loading berth; a 3.04-mile-long,

¹ 15 U.S.C. § 717b.

² 18 C.F.R. pt. 153 (2021).

³ Application at 4; *id.* at Ex. B.

42-inch-diameter pipeline; and other process and support facilities. Specifically, Commonwealth proposes to construct the following:

- Six 1.4 million metric tonnes per annum (MTPA) liquefaction trains, each with an approximately 60-megawatt gas turbine with mechanical drive;
- Six 50,000 cubic meter (m^3) (net capacity equivalent to approximately 1.06 billion cubic feet (Bcf)) full-containment LNG storage tanks;⁴
- A single berthing dock with the capacity to service vessels from 10,000 m^3 to 216,000 m^3 ;
- A potable water supply line from existing municipal water systems;
- A 180-megawatt simple cycle electric power generator for the LNG Facility auxiliary loads, including emergency and back-up systems;
- Various operational buildings and structures;
- A 3.04-mile-long, 42-inch-diameter natural gas pipeline with tie-ins (including metering and emergency shut-off systems) at the existing 12- and 20-inch-diameter Bridgeline pipelines and the 16-inch-diameter Kinetica pipeline; and
- An interconnection to the LNG terminal, including a pig receiver, separator, liquid storage facility, custody transfer meters, pressure regulators, emergency shutdown valves, and gas analyzers.

4. Each liquefaction train has a design production capacity of approximately 65.1 Bcf per year (1.4 MTPA) for a total design export capacity of 8.4 MTPA. However, under optimal operating conditions, the project will have a peak liquefaction capacity of up to 441.4 Bcf per year (approximately 9.5 MTPA). The 3.04-mile pipeline will be capable of

⁴ In the 2021 amendment, Commonwealth proposed to modify the LNG storage tank design from an inner and outer tank fabricated from nine percent nickel steel to a nine percent nickel steel inner tank and a concrete outer tank with carbon steel liner in order to bring the design into compliance with all appropriate code requirements and preclude the need for a Special Permit from the Department of Transportation's (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA). Amendment at 3-4. The amendment also proposes to increase the net capacity of the LNG storage tanks from 40,000 m^3 to 50,000 m^3 , for a total working storage volume of 300,000 m^3 . *Id.* at 4.

delivering up to 1.44 Bcf per day (Bcf/d) of natural gas to support the peak liquefaction capacity.

5. Commonwealth states that the purpose of the proposed project is to liquefy and export to foreign markets domestically produced natural gas sourced from the existing interstate and intrastate pipeline systems of Kinetica Partners, LLC (Kinetica) and EnLink Bridgeline Holdings LP (Bridgeline), respectively, in southwest Louisiana.

6. On April 17, 2020, the Department of Energy's Office of Fossil Energy (DOE/FE) authorized Commonwealth to export 9.5 MTPA (1.21 Bcf/d) of LNG to nations with which the United States has a Free Trade Agreement (FTA) for a 25-year term.⁵ Commonwealth's application to export up to 9.5 MTPA of LNG to non-FTA nations is pending with DOE/FE.⁶

II. Notice, Interventions, Protests, and Comments

7. Notice of Commonwealth's application was published in the *Federal Register* on September 9, 2019, with motions to intervene due by September 24, 2019.⁷ Notice of Commonwealth's amendment to the 2019 application was published in the *Federal Register* on July 20, 2021, with motions to intervene due by August 3, 2021.⁸ Cameron LNG, LLC and Public Citizen, Inc, filed timely, unopposed motions to intervene in response to the notices of the 2019 application and the 2021 amendment,

⁵ See Commonwealth LNG, LLC, FE Docket No. 19-134-LNG, Order No. 4521 (Apr. 17, 2020) (Order No. 4521) (authorizing exports for a 25-year term, beginning on the earlier of the date of first exportation or seven years from the date of DOE/FE's authorization).

⁶ On September 11, 2020, Commonwealth requested to amend its pending application to the DOE/FE to request an export term to non-FTA nations through December 31, 2050, instead of the originally requested 20-year term. See Commonwealth LNG, LLC, Application to Amend Requested Export Term in Pending Long-Term Application Through December 31, 2050, FE Docket No. 19-134-LNG (filed Sept. 11, 2020). Commonwealth states that these volumes are not additive to the approved export volumes in Order No. 4521.

⁷ 84 Fed. Reg. 47,284 (Sept. 24, 2019).

⁸ 86 Fed. Reg. 38,337 (July 20, 2021).

respectively.⁹ On March 5, 2020, Venture Global Calcasieu Pass, LLC, filed an opposed motion to intervene out of time. This late intervention was granted on May 8, 2020.¹⁰ On August 3, 2021, Center for Biological Diversity, Healthy Gulf, Louisiana Bucket Brigade, Louisiana Environmental Action Network, National Audubon Society, Port Arthur Community Action Network, Restore Explicit Symmetry To Our Ravaged Earth, Sierra Club, and Turtle Island Restoration Network filed a joint timely motion to intervene, which was opposed. This intervention was granted on October 12, 2021.¹¹

8. Protests were filed by National Audubon Society and, jointly, by Center for Biological Diversity, Healthy Gulf, Louisiana Environmental Action Network, Louisiana Bucket Brigade, Port Arthur Community Action Network, Restore Explicit Symmetry To Our Ravaged Earth, Sierra Club, and Turtle Island Restoration Network (collectively, the Environmental Coalition).¹² On August 18, 2021, Commonwealth filed an answer to the comments and protests by the National Audubon Society and the Environmental Coalition. Although the Commission's Rules of Practice and Procedure do not permit answers to protests,¹³ we will accept the answers herein because they clarify the concerns raised and provide information that has assisted in our decision making. In addition, we received a number of comments in support of the project, citing an increase in job opportunities, local economic investment, and minimization of environmental impacts. Numerous individuals and entities also filed comments expressing concerns about the

⁹ Timely, unopposed motions to intervene are automatically granted pursuant to Rule 214 of the Commission's Rules of Practice and Procedure. 18 C.F.R. § 385.214 (2021).

¹⁰ May 8, 2020 Notice Granting Late Intervention.

¹¹ Oct. 12, 2021 Notice Granting Intervention.

¹² Two slightly different but overlapping coalitions of organizations filed further comments on October 25, 2021 and May 23, 2022. For ease of reference, we also refer to these commenters under the umbrella of the Environmental Coalition. Specific organizations are listed at notes 18 & 47, *infra*. On October 12, 2022, Louisiana Bucket Brigade filed, in this and several other Commission gas project dockets, a letter addressed to President Biden expressing general opposition to LNG export terminals on environmental, economic, climate, and national security grounds and sharing information about its *Defend U.S. Consumers* campaign, which Louisiana Bucket Brigade states will increase public awareness about the risks associated with continued gas export terminal development. Louisiana Bucket Brigade October 12, 2022 Letter at 1-4. The Bucket Brigade's October 12th letter generally expresses the same issues already raised in its joint protest and environmental comments in this proceeding.

¹³ 18 C.F.R. § 385.213(a)(2) (2021).

need for and environmental impacts of the project. The protests and comments were addressed in the draft Environmental Impact Statement (EIS), and as appropriate, below.

9. On May 23, 2022, the Natural Resources Defense Council (NRDC) filed a timely motion to intervene and comments pursuant to the Commission's regulation at section 380.10(a), which states that “[a]ny person who files a motion to intervene on the basis of a draft environmental impact statement will be deemed to have filed a timely motion, in accordance with § 385.214, as long as the motion is filed within the comment period for the draft environmental impact statement.”¹⁴ NRDC’s comments are addressed in the final EIS,¹⁵ and as appropriate, below.

III. Discussion

A. Public Interest Standard Under Section 3 of the NGA

10. Because the proposed facilities will be used to export natural gas to foreign countries, the construction and operation of the proposed facilities and site of their location require approval by the Commission under section 3 of the NGA.¹⁶ Section 3 provides that an application shall be approved if the Commission finds the proposal “will not be [in]consistent with the public interest,” subject to “such terms and conditions as the Commission [may] find necessary or appropriate.”¹⁷

¹⁴ 18 C.F.R. § 380.10(a) (2021).

¹⁵ Unless otherwise noted, “EIS” refers to the final EIS.

¹⁶ 15 U.S.C. § 717b(a). The regulatory functions of NGA section 3 were transferred to the Secretary of Energy of the DOE in 1977 pursuant to section 301(b) of the Department of Energy Organization Act, Pub. L. No. 95-91, 42 U.S.C. § 7101 *et seq.* The Secretary subsequently delegated to the Commission the authority to approve or disapprove the construction and operation of natural gas import and export facilities and the site at which such facilities shall be located. The most recent delegation is in DOE Delegation Order No. 00-004.00A, effective May 16, 2006. The Commission does not authorize importation or exportation of the commodity itself. Rather, applications for authorization to import or export natural gas must be submitted to the DOE. *See EarthReports, Inc. v. FERC*, 828 F.3d 949, 952-53 (D.C. Cir. 2016) (detailing how regulatory oversight for the export of LNG and supporting facilities is divided between the Commission and DOE).

¹⁷ 15 U.S.C. § 717b(a), (e)(3). For a discussion of the Commission’s authority to condition its approvals of LNG facilities under section 3 of the NGA, *see, e.g., Distrigas*

11. Commenters state that Commonwealth fails to provide evidence of market need for the project, that authorizing additional LNG infrastructure would likely result in an overbuild of capacity, and that the project's contribution to climate change and other adverse environmental impacts render it contrary to the public interest.¹⁸ The Environmental Coalition asserts that the project does not provide meaningful public benefit if it merely duplicates capacity that is already provided by other existing projects.¹⁹ Louisiana Bucket Brigade asserts that LNG companies are exploiting Russian hostilities to garner support for their proposed LNG projects and that expanding the number of LNG terminals poses national security risks.²⁰ Last, the Environmental Coalition argues that the Commission cannot simply defer to the DOE's assessment of the public interest, especially since DOE has "disclaimed authority to consider export-induced gas production and other effects occurring 'upstream' of delivery of LNG to an export carrier" under the National Environmental Policy Act (NEPA).²¹

12. Section 3(a) of the NGA provides, in part, that "no person shall export any natural gas from the United States to a foreign country or import any natural gas from a foreign country without first having secured an order of the Commission authorizing it to do so."²² As noted above, in 1977 the Department of Energy Organization Act transferred the regulatory functions of section 3 of the NGA to the Secretary of Energy. Subsequently, the Secretary of Energy delegated to the Commission authority to "[a]pprove or disapprove the construction and operation of particular facilities, the site at which such facilities shall be

Corp. v. FPC, 495 F.2d 1057, 1063-64 (D.C. Cir.), *cert. denied*, 419 U.S. 834 (1974); *Dynegy LNG Prod. Terminal, L.P.*, 97 FERC ¶ 61,231 (2001).

¹⁸ Environmental Coalition August 3, 2021 Protest at 2-3, 6; Center for Biological Diversity, Healthy Gulf, John Allaire, Louisiana Environmental Action Network, National Audubon Society, PACAN, Scenic Galveston, Inc., Sierra Club, and Turtle Island Restoration Network October 25, 2021 Comments at 1, 16.

¹⁹ Environmental Coalition August 3, 2021 Protest at 2 (citing *Env't Def. Fund v. FERC*, 2 F.4th 953, 973 (D.C. Cir. 2021), *cert. denied*, 142 S. Ct. 1668 (2022)).

²⁰ Louisiana Bucket Brigade October 12, 2022 Letter at 1-2.

²¹ Environmental Coalition August 3, 2021 Protest at 2-3 (citing National Environmental Policy Act Implementing Procedures, 85 Fed. Reg. 78,197, 78,198, 78,201 (Dec. 4, 2020)).

²² 15 U.S.C. § 717b(a).

located, and with respect to natural gas that involves the construction of new domestic facilities, the place of entry for imports or exit for exports.”²³

13. However, as we have previously explained,²⁴ the Secretary has not delegated to the Commission any authority to approve or disapprove the import or export of the commodity itself.²⁵ Therefore, we decline to address commenters’ and protestors’ economic claims (e.g., those regarding market demand for LNG), which are relevant only to the exportation of the commodity of natural gas, which is within DOE’s exclusive jurisdiction, and are not implicated by our limited action of reviewing proposed terminal sites. The Commission’s authority under NGA section 3 applies “only to the siting and the operation of the facilities necessary to accomplish an export[,]”²⁶ while “export decisions [are] squarely and exclusively within the [DOE]’s wheelhouse.”²⁷ Similarly, issues related to the impacts of natural gas development and production are related to DOE’s authorization of the export and not the Commission’s siting of the facilities,²⁸ notwithstanding DOE’s interpretation of its own obligations under NEPA.

14. As the U.S. Court of Appeals for the District of Columbia Circuit has explained, the NGA section 3 standard that a proposal “shall” be authorized unless it “will not be

²³ DOE Delegation Order No. 00-004.00A.

²⁴ See *Alaska Gasline Dev. Corp.*, 171 FERC ¶ 61,134, at P 15, *order on reh’g*, 172 FERC ¶ 61,214 (2020).

²⁵ See *supra* note 16; see also *Freeport LNG Dev., L.P.*, 148 FERC ¶ 61,076, *reh’g denied*, 149 FERC ¶ 61,119 (2014), *aff’d sub nom. Sierra Club v. FERC*, 827 F.3d 36 (D.C. Cir. 2016) (finding that because the DOE, not the Commission, has sole authority to license the export of any natural gas through LNG facilities, the Commission is not required to address the indirect effects of the anticipated export of natural gas in its NEPA analysis); *Sabine Pass Liquefaction, LLC*, 146 FERC ¶ 61,117, *reh’g denied*, 148 FERC ¶ 61,200 (2014), *aff’d sub nom. Sierra Club v. FERC*, 827 F.3d 59 (D.C. Cir. 2016).

²⁶ *Trunkline Gas Co., LLC*, 155 FERC ¶ 61,328, at P 18 (2016).

²⁷ *Sierra Club v. FERC*, 827 F.3d at 46.

²⁸ *Id.*

consistent with the public interest[,]”²⁹ “sets out a general presumption favoring such authorization[s].”³⁰ To overcome this favorable presumption and support denial of an NGA section 3 application, there must be an “affirmative showing of inconsistency with the public interest.”³¹ We have reviewed Commonwealth’s application to determine if the siting, construction, and operation of its facilities as proposed would not be consistent with the public interest.³² Construction of the Commonwealth LNG Project would impact approximately 230.8 acres of land (165.8 acres for the terminal and 48.4 acres for the pipeline), and operation of the project would continue to impact about 153.0 of those acres (152.7 acres for the terminal and 0.3 acres for the pipeline).³³ An additional 47 acres of open water would be affected by construction and operation of the marine berthing dock facilities. After construction, the Commonwealth LNG Project would be on open land (89.3 %), developed land (8.2 %), open water (2.3 %), and forested land (0.2 %).³⁴

15. Commission staff has prepared a comprehensive EIS thoroughly analyzing all environmental impacts properly associated with our action of approving the siting and operation of the Commonwealth LNG Project. As discussed below, the EIS finds that, although some impacts would be permanent and significant, such as impacts on visual resources, most impacts would not be significant or would be reduced to less-than-significant levels with the implementation of avoidance, minimization, and mitigation

²⁹ 15 U.S.C. § 717b(a). In addition, NGA section 3(c) provides that the exportation of gas to FTA nations “shall be deemed to be consistent with the public interest.” *Id.* § 717b(c). As noted above, Commonwealth has received authorization to export to FTA nations. *See supra* P 6.

³⁰ *EarthReports v. FERC*, 828 F.3d at 953 (quoting *W. Va. Pub. Servs. Comm’n v. U.S. Dep’t of Energy*, 681 F.2d 847, 856 (D.C. Cir. 1982)); *see also Sierra Club v. U.S. Dep’t of Energy*, 867 F.3d 189, 203 (D.C. Cir. 2017).

³¹ *Sierra Club v. U.S. Dep’t of Energy*, 867 F.3d at 203 (quoting *Panhandle Producers & Royalty Owners Ass’n v. Econ. Regul. Admin.*, 822 F.2d 1105, 1111 (D.C. Cir. 1987)).

³² See *Nat'l Steel Corp.*, 45 FERC ¶ 61,100, at 61,332-33 (1988) (observing that DOE, “pursuant to its exclusive jurisdiction, has approved the importation with respect to every aspect of it except the point of importation” and that the “Commission’s authority in this matter is limited to consideration of the place of importation, which necessarily includes the technical and environmental aspects of any related facilities”).

³³ Final EIS at 2-10, tbl. 2.2-1.

³⁴ *See id.* at 4-167, tbl. 4.8.1-1.

measures recommended in the EIS³⁵ and adopted by this order. We find that the various arguments raised regarding the Commonwealth LNG Project do not amount to an affirmative showing of inconsistency with the public interest that is necessary to overcome the presumption in section 3 of the NGA.

16. In accordance with the Memorandum of Understanding signed on August 31, 2018, by the Commission and the Department of Transportation's (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA),³⁶ PHMSA undertook a review of the proposed project's ability to comply with the federal safety standards under Part 193, Subpart B, of Title 49 of the Code of Federal Regulations.³⁷ On August 2, 2022, PHMSA issued a Letter of Determination (LOD) indicating that Commonwealth has demonstrated that the siting of the proposed Commonwealth LNG Project complies with these federal safety standards. The LOD includes six conditions that must be met, four of which overlap with Commission staff's recommended conditions, which conditions are adopted herein in Appendix A. Two of the LOD conditions pertain to emergency response planning for hazards that extend over a highway that bisects Commonwealth's property.³⁸ The Commission is responsible for review and approval of Emergency Response Plans developed in coordination with federal, state, and local emergency response organizations. Accordingly, Environmental Condition 39 requires Commonwealth to file for review and written approval by Director of OEP Emergency Response Plans and any associated cost sharing plan provisions in coordination with federal, state, and local agencies for hazards that may reach State Highway 27. Commission staff will coordinate with DOT PHMSA on any overlapping conditions; e.g., the emergency response requirements. If the project is subsequently modified so that it differs from the details provided in the documentation submitted to PHMSA, further review would be conducted by PHMSA.

17. Commonwealth will operate its LNG terminal under the terms and conditions mutually agreed to by its customers and will solely bear the responsibility for the recovery of any costs associated with construction and operation of the terminal and associated

³⁵ As part of its environmental review, staff developed mitigation measures it determined would appropriately and reasonably reduce the environmental impacts resulting from project construction and operation.

³⁶ *Memorandum of Understanding Between the Department of Transportation and the Federal Energy Regulatory Commission Regarding Liquefied Natural Gas Facilities* (Aug. 31, 2018), <https://www.ferc.gov/legal/mou/2018/FERC-PHMSA-MOU.pdf>.

³⁷ 49 C.F.R. pt. 193, subpt. B (2021).

³⁸ Specifically, these LOD provisions call for signage to be added and maintained on or near the state highway to aid in evacuation and procedures on coordination with local agencies to evacuate persons on the state highway right of way.

facilities. Accordingly, Commonwealth's proposal does not trigger NGA section 3(e)(4).³⁹

18. In view of the above, after careful consideration of the entire record of this proceeding, including the findings and recommendations of the final EIS, we find that, subject to the conditions imposed in this order, Commonwealth's proposal is not inconsistent with the public interest. Therefore, we will grant Commonwealth's application.

B. Environmental Analysis

19. To satisfy the requirements of NEPA,⁴⁰ Commission staff evaluated the potential environmental impacts of the proposed project in an EIS. The U.S. Army Corps of Engineers (COE); U.S. Coast Guard (USCG); U.S. Department of Energy (DOE); DOT's PHMSA; U.S. Fish and Wildlife Service (FWS); National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS); and U.S. Environmental Protection Agency (EPA) participated as cooperating agencies, as defined by NEPA. Cooperating agencies have jurisdiction by law or special expertise with respect to resources potentially affected by a proposal and participate in the NEPA analysis.

20. On February 22, 2018, the Commission issued a *Notice of Intent (NOI) to Prepare an Environmental Impact Statement for the Planned Commonwealth LNG Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Session*. The NOI was issued during the Commission's pre-filing review process for Commonwealth's project that began on August 15, 2017, in Docket No. PF17-8-000. The pre-filing review process provides opportunities for interested stakeholders to become involved early in project planning, facilitates interagency cooperation, and assists in the

³⁹ 15 U.S.C. § 717b(e)(4) (governing orders for LNG terminal offering open access service).

⁴⁰ 42 U.S.C. §§ 4321 *et seq.* See also 18 C.F.R. pt. 380 (2021) (Commission's regulations implementing NEPA). On July 16, 2020, CEQ issued a final rule updating its 1978 regulations, Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. 43,304 (July 16, 2020), which was effective September 14, 2020; however, the NEPA review of this project was in process at that time and was prepared pursuant to the 1978 regulations. On April 20, 2022, CEQ issued a final rule to amend three provisions of its NEPA regulations which became effective on May 20, 2022. National Environmental Policy Act Implementing Regulations Revisions, 87 Fed. Reg. 23,453 (Apr. 20, 2022). The April 2022 final rule generally restores provisions of the 1978 regulations that were modified in 2020. Therefore, the Commonwealth LNG Project EIS is consistent with the April 2022 final rule.

identification and resolution of issues prior to a formal application being filed with the Commission. The NOI was published in the *Federal Register*⁴¹ and was mailed to project stakeholders. FERC staff held a public scoping session in Johnson Bayou, Louisiana on March 13, 2018, to receive public comments on the project. The pre-filing process ended on August 20, 2019, when Commonwealth filed its application. During the scoping periods, we received over 240 comments from landowners; federal, state, and local agencies; Native American Tribes; companies and non-governmental organizations; and other interested individuals.

21. On October 15, 2019, the Commission issued a *Notice of Schedule for Environmental Review of the Commonwealth LNG Project* (NOS). The NOS was published in the *Federal Register* on October 21, 2019.⁴² The NOS established an anticipated issuance date for the final EIS of October 2, 2020.

22. On March 16, 2020, the Commission suspended the environmental review schedule pending sufficient responses from Commonwealth to Commission staff data requests and an official interpretation from PHMSA pertaining to Commonwealth's proposed LNG storage tank design. On June 8, 2021, Commonwealth filed an amendment to its application to modify the proposed LNG storage tank design and capacities in a manner that resolved many of the data requests' issues and would not require Commonwealth to request a special permit to waive PHMSA's minimum federal regulations.

23. On September 24, 2021, the Commission issued a second NOI that was published in the *Federal Register* on September 30, 2021,⁴³ and established a revised issuance date for the final EIS of September 9, 2022. It also established an additional public scoping comment period that closed on October 25, 2021.

24. On March 31, 2022, Commission staff issued a draft EIS. Notice of the draft EIS was published in the *Federal Register* on April 6, 2022, establishing a 45-day public comment period that ended on May 23, 2022.⁴⁴ Copies of the notice were mailed to 413 stakeholders. Commission staff held virtual public comment sessions on April 25 and 26, 2022, to solicit and receive comments on the draft EIS. The Commission received written and verbal comments on the draft EIS concerning potential project impacts on surface water and wetlands, vegetative communities of special concern, migratory birds and other wildlife, aquatic resources and essential fish habitat, special status species,

⁴¹ 83 Fed Reg. 10,470 (Mar. 29, 2018).

⁴² 84 Fed. Reg. 56,185 (Oct. 21, 2019).

⁴³ 86 Fed. Reg. 54,182 (Sept. 30, 2021).

⁴⁴ 87 Fed. Reg. 19,918 (Apr. 6, 2022).

recreation areas, visual resources, environmental justice communities, air quality and noise, reliability and safety, cumulative impacts, greenhouse gas emissions, and climate change. We received verbal comments from 10 individuals. We received over 40 written comments from federal agencies, state agencies, non-governmental organizations, and individuals, as well as multiple copies of two form letters.

25. Commission staff issued the final EIS for the project on September 9, 2022. The notice of availability of the final EIS was published in the *Federal Register* on September 15, 2022. The final EIS addresses: geology, soils, water resources, wetlands, vegetation, wildlife, aquatic resources, threatened and endangered species, land use, recreation, visual resources, socioeconomics, environmental justice, cultural resources, air quality, noise, safety, cumulative impacts, and identified alternatives. It also addresses all substantive environmental comments received on the draft EIS.

26. The final EIS concludes that construction and operation of the project would result in some adverse environmental impacts, but that with the mitigation measures recommended in the EIS, most of these impacts would be reduced to less than significant levels. The EIS concludes that impacts on visual resources, including visual impacts affecting environmental justice communities, would be significant.

27. The Commission received comments on the final EIS from the EPA and from Commonwealth, which are addressed below. Endangered species, greenhouse gas emissions, visual resources, and issues related to environmental justice communities and certain pending permits and consultations are also discussed further below.

1. Pending Permits and Consultations

28. Commonwealth would be responsible for obtaining all permits and approvals required to construct and operate the project. Commission staff listed major permits, approvals, and consultations in the final EIS,⁴⁵ including the required coastal use permit and essential fish habitat consultation, which are discussed below.

a. Coastal Use Permit

29. In the final EIS, Commission staff noted that Commonwealth would construct and operate the project in compliance with conditions that would be set forth in the Louisiana Department of Natural Resources Office of Coastal Management's coastal use permit, which will serve as the state's Coastal Zone Management Act consistency determination.⁴⁶ Because Commonwealth has not yet obtained the permit, Commission staff included a

⁴⁵ Final EIS at 1-16 to 1-18.

⁴⁶ See Final EIS at 4-174.

recommendation that, prior to construction, Commonwealth should file with the Commission a copy of the consistency determination. The Environmental Coalition argues that this approach “fails to provide the opportunity for informed, meaningful public participation that NEPA requires” and that the Commission cannot conditionally issue a certificate when there is reason to believe that various permits will not or should not have been issued by the relevant agencies “due to inconsistencies with state laws.”⁴⁷

30. The Commission’s practice of issuing conditional certificates has consistently been affirmed by courts as lawful.⁴⁸ As we have explained, the Commission’s longstanding approach is a practical response to the reality that it may be impossible for an applicant to obtain all approvals necessary to construct and operate a project in advance of the Commission’s issuance of its certificate without unduly delaying a project.⁴⁹ We find that there is a sufficiently developed record before us regarding the benefits and adverse impacts of the project before us upon which to base our determination. Accordingly, staff’s recommendation that Commonwealth should file with the Commission a copy of the determination of consistency with the Coastal Zone Management Act before construction has been adopted as environmental condition 17 and is included in appendix A of this order.

⁴⁷ Center for Biological Diversity, John Allaire, Louisiana Bucket Brigade, Micah 6:8 Mission, National Audubon Society, RESTORE, Sierra Club, and Turtle Island Restoration Network May 23, 2022 Comments at 32-34 (Environmental Coalition May 23, 2022 Comments).

⁴⁸ See *Del. Riverkeeper Network v. FERC*, 857 F.3d 388, 399 (2017) (upholding Commission’s approval of a natural gas project conditioned on securing state certification under section 401 of the Clean Water Act); see also *Myersville Citizens for a Rural Cnty., Inc. v. FERC*, 783 F.3d 1301, 1320-21 (2015) (upholding the Commission’s conditional approval of a natural gas facility construction project where the Commission conditioned its approval on the applicant securing a required federal Clean Air Act air quality permit from the state); *Del. Dep’t. of Nat. Res. & Envtl. Control v. FERC*, 558 F.3d 575, 578-79 (D.C. Cir. 2009) (holding Delaware suffered no concrete injury from the Commission’s conditional approval of a natural gas terminal construction despite statutes requiring states’ prior approval because the Commission conditioned its approval of construction on the states’ prior approval); *Pub. Utils. Comm’n. of Cal. v. FERC*, 900 F.2d 269, 282 (D.C. Cir. 1990) (holding the Commission had not violated NEPA by issuing a certificate conditioned upon the completion of the environmental analysis).

⁴⁹ See, e.g., *Broadwater Energy LLC*, 124 FERC ¶ 61,225, at P 59 (2008); *Crown Landing LLC*, 117 FERC ¶ 61,209, at P 26 (2006); *Millennium Pipeline Co., L.P.*, 100 FERC ¶ 61,277, at PP 225-231 (2002).

b. Essential Fish Habitat Consultation

31. Under the Magnuson-Stevens Fishery Conservation and Management Act, as amended in 1996, a federal agency must consult with NMFS when authorizing a proposed activity that will adversely affect essential fish habitat (EFH). As described in the final EIS, the consultation process starts by the action agency (the Commission) providing notification of the action to NMFS.⁵⁰ The action agency then prepares an EFH assessment. Next, NMFS reviews the assessment and may provide conservation recommendations. Finally, the action agency must respond to NMFS, and for any conservation recommendation that is not recommended, explain its reasoning for not adopting the recommendation. The Commonwealth LNG Project would impact essential fish habitat as a result of construction of Commission-jurisdictional facilities (the LNG terminal and pipeline) as well as non-jurisdictional facilities (through a beneficial use of dredged materials (BUDM) pipeline and placement area). Therefore, Commission staff initiated consultation with NMFS for the project.⁵¹

32. In the final EIS, Commission staff described potential impacts on EFH as well as the consultation history between the Commission and NMFS. The Environmental Coalition states that the draft EIS did not provide an opportunity for meaningful comment on the Commission's assessment of the project's impact on EFH because, for example, the public has not yet been able to review any potential conservation measures recommended by NMFS.⁵² The draft and final EIS stated that Commonwealth would mitigate temporary impacts on EFH through implementation of the Project's *Wetland and Waterbody Construction and Mitigation Procedures*, including revegetation and through wetland mitigation bank credits. Commonwealth is actively coordinating mitigation requirements for EFH with the U.S. Army Corps of Engineers (Corps) as part of the section 404 and 10 permitting process and the Louisiana Department of Natural Resources Office of Coastal Management (OCM) as part of the Coastal Use Permit process and will provide mitigation for EFH impacts according to the results of the Louisiana Wetland Rapid Assessment Method and Wetland Value Assessment calculations, respectively, as recommended by NMFS. As stated in the final EIS, Commonwealth's mitigation proposal for impacts on EFH has been modified since the draft EIS. We note that on October 26, 2022,⁵³ NMFS filed its EFH Conservation Recommendations. One of NMFS' Conservation Recommendations is that the applicant be required to purchase wetland mitigation bank credits from the Corps' approved tidally influenced mitigation banks within the

⁵⁰ Final EIS at 4-129 to 4-130.

⁵¹ See October 5, 2022 letter to NMFS initiating EFH consultation.

⁵² Environmental Coalition May 23, 2022 Comments at 89.

⁵³ See NMFS October 26, 2022 letter.

Chenier Plain. The Corps is in the process of determining mitigation requirements for impacts on wetlands (some of which are EFH). Although wetland mitigation is still pending, the Corps is the agency responsible for, and with special expertise in, ensuring no net loss of wetlands. Our staff has not recommended any additional mitigation, nor does the record support doing so. Accordingly, we will not require any additional wetland mitigation outside of the Corps' requirements.

33. NMFS states that the water control structure⁵⁴ should be replaced by an open tidal ditch to allow for control of water ingress volumes and salinity levels in the culvert waters but also permit ingress and egress of marsh fauna at the terminal site.⁵⁵ The water control structure was discussed in the draft EIS but details were further developed in the final EIS. NMFS is mainly concerned that the structure will strand EFH species. Its most recent concerns are that more information is needed to identify the purpose and need for the water control structure, and that Commonwealth has not identified how its actions would impact water levels and salinity enough to require it. NMFS requested additional data related to water level and salinity, monitoring, operation, reporting, and alternatives. Commonwealth responded to these concerns in its November 4, 2022 filing. The structure would mimic the natural behavior of the existing drainage once construction is complete, primarily of the large wetlands and waterbodies west of the terminal. The OCM has stated that the project, including the water control structure, would have little to no negative impacts on the local hydrology. The current hydrology is maintained through an existing water control structure, which the proposed structure is intended to mimic. Alternatives were discussed in appendix D of the final EIS. Given that Commonwealth has stated it would consult with state and federal agencies, including OCM, NMFS, and the Corps, to confirm the final design of the structure, that specific details of the culvert and water control structure design would be determined during the final design of the Terminal, and the intent of the structure is to maintain salinity, hydrology, and water levels, we conclude that the intent of NMFS Conservation Recommendation 2 has been met.

34. Commonwealth would also use a pipeline to move dredge materials, which is not jurisdictional to the Commission. As described in the draft EIS, Commonwealth's plan was to place dredge materials at a 1,100-acre dredge materials placement area (DMPA) about 500 feet offshore and directly south of the Terminal. Commonwealth's proposal, as detailed in the final EIS, is now to transport dredge slurry to a 640-acre BUDM site within the wetlands on the south shore of Calcasieu Lake in the FWS Cameron Prairie NWR. Commonwealth has been developing the BUDM site proposal with input from multiple agencies, including the Coastal Protection and Restoration Authority. This beneficial use is accepted as mitigation for impacts on wetlands by the Corps. NMFS relayed concerns

⁵⁴ See *id.*

⁵⁵ See Final EIS at 2-7.

regarding this non-jurisdictional area in its October 26, 2022 letter, including the use of exterior borrow, gapping of erosion control devices, and final target marsh fill elevation, which Commonwealth addressed in its November 4, 2022 filing. However, this relates to a Corps-jurisdictional area and will be addressed by permits issued by the Corps and potentially the FWS. We note that this location would be used for initial dredge material disposal during construction and two maintenance dredge events. The final placement of future maintenance dredging would be coordinated with the Corps.

35. NMFS also states that the Corps should provide a complete EFH assessment which clearly characterizes, delineates, and quantifies impacts on EFH by habitat type, includes all activities associated with this project, and describes measures taken to avoid, minimize, mitigate, or offset the adverse impacts of the proposed activities on EFH. As the lead federal agency, Commission staff prepared an EFH assessment within the final EIS as appendix D. However, we note that the Corps may choose to provide an updated EFH assessment, including the finalized wetland mitigation.

2. Eastern Black Rail

36. As stated in the final EIS with respect to the eastern black rail, FWS's Biological Opinion found that the project would likely adversely affect, but is not likely to jeopardize the continued existence of the species.⁵⁶ The Environmental Coalition argues that the Biological Opinion fails to analyze the entire agency action, does not properly define the action area, fails to adequately analyze the project's effects, improperly relies on speculative mitigation measures to support its decision that the project will not jeopardize the continued existence of the species, and fails to adequately explain why estimated take numbers will not jeopardize the continued existence of the species.⁵⁷ Therefore, the Environmental Coalition states that the Commission's reliance on the flawed Biological Opinion violates section 7(a)(2) of the Endangered Species Act (ESA).⁵⁸

37. As we have explained in prior orders, although a federal agency is required to ensure that its action will not jeopardize the continued existence of listed species or adversely modify their critical habitat, it must do so in consultation with the appropriate agency, in this case, FWS. Because FWS is charged with implementing the ESA, it is the

⁵⁶ Final EIS at 4-144 to 4-145.

⁵⁷ Environmental Coalition May 23, 2022 Comments at 42-61. National Audubon Society also states that the BO is flawed. National Audubon Society May 23, 2022 Comments at 1.

⁵⁸ Environmental Coalition May 23, 2022 Comments at 61.

recognized expert regarding matters of listed species and their habitats, and the Commission may rely on its conclusions.⁵⁹

38. In reviewing whether the Commission may appropriately rely on the Biological Opinion, the relevant inquiry is not whether the document is flawed, but rather whether the Commission's reliance was arbitrary and capricious.⁶⁰ Therefore, an agency may rely on a Biological Opinion if a challenging party fails to cite new information that the consulting agency did not take into account that challenges the Biological Opinion's conclusions. Here, the alleged defects that the Environmental Coalition identifies do not rise to the level of new information that would cause the Commission to call into question the factual conclusions of FWS's Biological Opinion. Thus, it is appropriate for the Commission to rely on the judgment of FWS, the agency that Congress has determined in the ESA should be responsible for providing its expert opinion regarding whether authorizing the project is likely to jeopardize the continued existence of the eastern black rail.

3. Visual Resources

39. Commonwealth asserts that its comments on the draft EIS regarding impacts on visual resources were not addressed in the final EIS and continues to contend that the finding in the final EIS that impacts on visual resources would be significant is unsupported.⁶¹ Specifically, Commonwealth argues that: (1) the finding of significant impact on certain viewsheds is arbitrary and capricious; (2) Commission staff incorrectly determines that the project would "add" or "introduce" an industrial element to support that finding; (3) Commission staff inaccurately characterizes a poured concrete slab and metal canopy as a permanent recreational vehicle (RV) residence and relies on that property to incorrectly support staff's finding of significant cumulative impacts on visual resources.

40. First, Commonwealth disagrees with the finding that the proposed terminal would have a significant impact on the viewsheds of users of the Calcasieu Ship Channel; users of Holly and Broussard Beaches; and motorists along the Creole Nature Trail

⁵⁹ *Annova LNG Common Infrastructure, LLC*, 170 FERC ¶ 61,140, at P 55 (2020) (citing *City of Tacoma v. FERC*, 460 F.3d 53, 75 (D.C. Cir. 2006) (finding that expert agencies such as FWS have greater knowledge about the conditions that may threaten listed species and are best able to make factual determinations about appropriate measures to protect the species)).

⁶⁰ *City of Tacoma v. FERC*, 460 F.3d at 75.

⁶¹ Commonwealth October 27, 2022 Comments at n.8 & 8-12.

All-American Road.⁶² Commonwealth states that all three groups would already have line-of-sight to the existing, operating, larger Calcasieu Pass LNG facility.⁶³ Commonwealth states that users of Broussard Beach would have very limited line-of-sight to the Commonwealth facility, as it would lie behind the existing Calcasieu Pass LNG terminal, which is between the Commonwealth terminal and Broussard Beach; users of Holly Beach near the Town of Holly Beach, as well as at the closest beach access point to the project terminal, would see the larger Calcasieu Pass LNG terminal in line with Commonwealth's facility. Commission staff concluded that the proposed terminal would have significant visual impact on users of Holly and Broussard Beaches based on visual renderings created by Commonwealth.⁶⁴ These conclusions were based on the terminal, including the six LNG storage tanks, flare stack, and liquefaction trains, being visible from Holly and Broussard Beaches. A portion of the Creole Nature Trail All-American Road runs adjacent to the proposed terminal site. As stated in the final EIS, the project would be visible for about 12 miles of the Creole Nature Trail All-American Road.⁶⁵ The final EIS states that for users directly adjacent to the terminal, the change from open marshland to a large industrial site would be a significant visual and viewshed change.⁶⁶ We agree with the staff's conclusion in the final EIS.

41. Next, Commonwealth states that contrary to the draft EIS' determination, the project would not "introduce" any industrial elements to the area because these elements are already present.⁶⁷ However, the analysis states that the terminal would "add" an "additional" industrial element to the area;⁶⁸ therefore, we agree with Commonwealth that the proposed terminal would not introduce a new industrial element to the project area. Commonwealth does not believe adding an LNG terminal to an area which already houses an existing LNG terminal, among other industrial facilities, would negatively impact the

⁶² *Id.* at 9.

⁶³ Portions of the Calcasieu Pass LNG Project were placed into service on April 7, 2021, and May 13 and July 28, 2022; however, construction is not yet complete.

⁶⁴ Final EIS at app. E.

⁶⁵ Final EIS at 4-173.

⁶⁶ Final EIS at 4-173.

⁶⁷ Commonwealth October 27, 2022 Comments at 9-10.

⁶⁸ Final EIS at 4-172.

viewshed and thus argues that a significance finding, without further justification, is arbitrary and capricious.⁶⁹

42. “In considering whether the effects of the proposed action are significant,” the Commission “analyze[s] the potentially affected environment and degree of the effects of the action.”⁷⁰ Although the general area already houses an existing LNG terminal, the construction of the Commonwealth LNG terminal would still adversely change the visual character of the environment, going from largely flat herbaceous land and wetlands to large industrial structures. We again note that much of the final EIS conclusion of impact on nearby visual receptors was based upon the visual renderings produced by the applicant.⁷¹ Additionally, the referenced existing LNG terminal is on the opposite side of the Calcasieu Ship Channel from the proposed project, thereby making it further removed from some of the sensitive receptors (e.g., an RV site and Holly Beach) than the project. For these reasons we agree with staff’s finding of significance with respect to visual resources.

43. Third, Commonwealth states it has concerns with staff’s conclusion that the project would have significant cumulative impacts on visual resources, when considered in conjunction with the Calcasieu Pass and CP2 LNG terminals.⁷² Moreover, Commonwealth believes this determination directly contradicts Commission staff’s finding that the Calcasieu Pass LNG facility would not result in significant cumulative visual impacts, particularly as the Calcasieu Pass final EIS included Commonwealth’s facility in its cumulative impacts analysis. Further, Commonwealth alleges that this conclusion is based solely on the extent of impacts of the project from the viewshed from a single temporary RV site, finding that the construction and operation of additional LNG terminals in the surrounding area would have a minimal cumulative impact.⁷³ Regarding the RV site, Commonwealth disagrees with the description of the poured concrete slab and metal canopy, owned by a Mr. John Allaire, as a “permanent RV residence” and requests the Commission refer to this property as “temporary living quarters for recreational, camping,

⁶⁹ Commonwealth October 27, 2022 Comments at 9-11.

⁷⁰ 40 C.F.R. § 1501.3(b) (2022).

⁷¹ Final EIS at app. E.

⁷² Commonwealth October 27, 2022 Comments at 11-12.

⁷³ *Id.*

travel, or seasonal use.”⁷⁴ Regardless of whether Mr. Allaire permanently resides in this location, staff accurately describes the visual impacts of the proposed terminal on Mr. Allaire’s property.⁷⁵ We agree with the finding in the final EIS that the proposed terminal would have a significant visual impact, and significant cumulative impact, on the viewshed from Mr. Allaire’s property. Mr. Allaire’s property is not adjacent to the Calcasieu Pass LNG terminal; therefore, Commission staff did not evaluate visual impacts on Mr. Allaire’s property in the final EIS for the Calcasieu Pass Project.

44. Finally, Commonwealth states that it has proposed a Visual Screening Plan to reduce viewshed impacts to the maximum extent possible, including its proposal to avoid disturbing native vegetation and its proposed planting of sugar berry trees.⁷⁶ The final EIS describes Commonwealth’s Visual Screening Plan and concludes that, even with Commonwealth’s Visual Screening Plan, the visual impacts on the RV location could be significant,⁷⁷ and as Commonwealth states, the final EIS did not identify any additional mitigation within our jurisdiction (i.e., within the project area) that would reduce these visual impacts.

4. Environmental Justice

45. In conducting NEPA reviews of proposed natural gas projects, the Commission follows the instruction of Executive Order 12898, which directs federal agencies to identify and address “disproportionately high and adverse human health or environmental effects” of their actions on minority and low-income populations (i.e., environmental justice communities).⁷⁸ Executive Order 14008 also directs agencies to develop

⁷⁴ *Id.* at 9 (referencing the Cameron Parish Police Jury code). Throughout the review process, Commonwealth and Mr. Allaire have disagreed with each other regarding the description of the RV, and the duration and frequency of its use.

⁷⁵ Final EIS at 4-172, 4-379.

⁷⁶ Commonwealth October 27, 2022 Comments at 12.

⁷⁷ Final EIS at 4-172.

⁷⁸ Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 16, 1994). While the Commission is not one of the specified agencies in Executive Order 12898, the Commission nonetheless addresses environmental justice in its analysis, in accordance with our governing regulations and guidance, and statutory duties. *See* 15 U.S.C. § 717b; *see also* 18 C.F.R. § 380.12(g) (2021) (requiring applicants for projects involving significant aboveground facilities to submit information about the socioeconomic impact area of a project for the Commission’s consideration during NEPA review); Commission,

“programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts.”⁷⁹ Environmental justice is “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”⁸⁰

46. Consistent with the Council on Environmental Quality (CEQ)⁸¹ and EPA⁸² guidance, the Commission’s methodology for assessing environmental justice impacts

Guidance Manual for Environmental Report Preparation at 4-76 to 4-80 (Feb. 2017), <https://www.ferc.gov/sites/default/files/2020-04/guidance-manual-volume-1.pdf>.

⁷⁹ Exec. Order No. 14,008, 86 Fed. Reg. 7619 (Feb. 1, 2021). The term “environmental justice community” includes disadvantaged communities that have been historically marginalized and overburdened by pollution. *Id.* at 7629. The term also includes, but may not be limited to minority populations, low-income populations, or indigenous peoples. *See* EPA, *EJ 2020 Glossary* (Aug. 18, 2022), <https://www.epa.gov/environmentaljustice/ej-2020-glossary>.

⁸⁰ EPA, *Learn About Environmental Justice*, <https://www.epa.gov/environmentaljustice/learn-about-environmental-justice> (Sep. 6, 2022). Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies. *Id.* Meaningful involvement of potentially affected environmental justice community residents means: (1) people have an appropriate opportunity to participate in decisions about a proposed activity that may affect their environment and/or health; (2) the public’s contributions can influence the regulatory agency’s decision; (3) community concerns will be considered in the decision-making process; and (4) decision makers will seek out and facilitate the involvement of those potentially affected. *Id.*

⁸¹ CEQ, *Environmental Justice: Guidance Under the National Environmental Policy Act* 4 (Dec. 1997) (CEQ’s *Environmental Justice Guidance*), https://www.energy.gov/sites/default/files/nepapub/nepa_documents/RedDont/G-CEQ-EJGuidance.pdf. CEQ offers recommendations on how federal agencies can provide opportunities for effective community participation in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving the accessibility of public meetings, crucial documents, and notices. There were opportunities for public involvement during the Commission’s prefilings and environmental review processes. Final EIS at 1-5.

⁸² See generally EPA, *Promising Practices for EJ Methodologies in NEPA*

considers: (1) whether environmental justice communities (e.g., minority or low-income populations)⁸³ exist in the project area; (2) whether impacts on environmental justice communities are disproportionately high and adverse; and (3) possible mitigation measures. As recommended in *Promising Practices*, the Commission uses the 50% and the meaningfully greater analysis methods to identify minority populations.⁸⁴ Specifically, a minority population is present where either: (1) the aggregate minority population of the block groups in the affected area exceeds 50% or (2) the aggregate minority population in the block group affected is 10% higher than the aggregate minority population percentage in the county/parish.⁸⁵

47. CEQ's *Environmental Justice Guidance* also directs low-income populations to be identified based on the annual statistical poverty thresholds from the U.S. Census Bureau. Using *Promising Practices'* low-income threshold criteria method, low-income populations are identified as block groups where the percent of a low-income population in the identified block group is equal to or greater than that of the county/parish.

48. To identify potential environmental justice communities, and as discussed in the final EIS, Commission staff used 2019 U.S. Census American Community Survey data⁸⁶ for the race, ethnicity, and poverty data at the state, county, and block group level.⁸⁷ Additionally, in accordance with *Promising Practices*, staff used EJScreen, EPA's environmental justice mapping and screening tool, as an initial step to gather information

Reviews (Mar. 2016) (Promising Practices), https://www.epa.gov/sites/default/files/2016-08/documents/nepa_promising_practices_document_2016.pdf.

⁸³ See generally Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 16, 1994). Minority populations are those groups that include: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic.

⁸⁴ See *Promising Practices* at 21-25.

⁸⁵ Here, Commission staff selected Calcasieu Parish, Cameron Parish, and Jefferson Davis Parish in Louisiana and Jefferson and Orange Counties, Texas as the comparable reference communities to ensure that affected environmental justice communities are properly identified. A reference community may vary according to the characteristics of the particular project and the surrounding communities. Final EIS at 4-190.

⁸⁶ U.S. Census Bureau, American Community Survey 2019 ACS 5-Year Estimates Detailed Tables, File# B17017, *Poverty Status in the Past 12 Months by Household Type by Age of Householder*, <https://data.census.gov/cedsci/table?q=B17017>; File #B03002 *Hispanic or Latino Origin By Race*, <https://data.census.gov/cedsci/table?q=b03002>.

⁸⁷ See Final EIS at fig. 4.9-1, apps. F & G.

regarding minority and low-income populations; potential environmental quality issues; environmental and demographic indicators; and other important factors.⁸⁸

49. Once staff collected the block group level data, as discussed in further detail below, staff conducted an impacts analysis for the identified environmental justice communities and evaluated health or environmental hazards; the natural physical environment; and associated social, economic, and cultural factors to determine whether impacts would be disproportionately high and adverse on environmental justice communities and also whether those impacts would be significant.⁸⁹ Commission staff assessed whether impacts on an environmental justice community were disproportionately high and adverse based on whether those impacts were predominately borne by that community, consistent with EPA's recommendations in *Promising Practices*.⁹⁰

50. Staff identified 91 environmental justice community block groups (out of 149 total block groups) within the 54-kilometer radius around the proposed LNG facility.⁹¹ Twenty-four of the block groups are identified as environmental justice populations based on poverty levels, 18 based on the minority threshold, and 49 based on both the poverty and minority thresholds.⁹² However, the block group within which the Commonwealth LNG terminal site is located, Census Tract 9702.01, Block Group 2, is not an environmental justice community. The closest environmental justice block groups to the terminal site are Census Tract 9702.01, Block Group 3 approximately 0.1 mile from the

⁸⁸ See Final EIS at 4-188.

⁸⁹ See *Promising Practices* at 33 (stating that “an agency may determine that impacts are disproportionately high and adverse, but not significant within the meaning of NEPA” and in other circumstances “an agency may determine that an impact is both disproportionately high and adverse and significant within the meaning of NEPA”).

⁹⁰ *Id.* at 44-46 (explaining that there are various approaches to determining whether an action will cause a disproportionately high and adverse impact, and that one recommended approach is to consider whether an impact would be “predominantly borne by minority populations or low-income populations”). We recognize that EPA and CEQ are in the process of updating their guidance regarding environmental justice and we will review and incorporate that anticipated guidance in our future analysis, as appropriate.

⁹¹ Final EIS at 4-191. For this project, we determined that a 54-kilometer radius around the proposed aboveground facilities was the appropriate unit of geographic analysis for assessing project impacts on the environmental justice communities. A 54-kilometer radius represents the furthest extent of impacts on environmental justice communities.

⁹² Final EIS at 4-191.

LNG terminal (with the closest residence, ship pilots' temporary housing, approximately 3,300 feet away) and Census Tract 9701, Block Group 1 approximately 2.7 miles from the proposed Commonwealth LNG pipeline.⁹³ The closest town within an environmental justice community is Cameron (within Census Tract 9702.01, Block Group 3), which is over 2 miles away from the terminal site.⁹⁴ With respect to the Park and Ride commuter parking lot locations, only one block group is an environmental justice community (Census Tract 33, Block Group 2). That community is within 1 mile of a Park and Ride lot.⁹⁵

51. The final EIS determined that potential impacts on the identified environmental justice communities may relate to wetlands, surface water, aquatic resources, recreation, tourism, socioeconomics, traffic, noise, air quality, safety, and visual resources.⁹⁶ Environmental justice concerns are not present for other resource areas such as geology, groundwater, wildlife, land use, or cultural resources, due to the minimal overall impact the project would have on these resources.⁹⁷

a. **Wetlands**

52. The final EIS finds that project impacts on wetlands would be short-term and temporary during construction, and permanent during operation.⁹⁸ While all the wetland impacts would be outside the boundaries of the identified environmental justice communities, the loss of wetland habitat, and the subsequent decrease in wetland benefits (i.e. shoreline and habitat protection for a variety of plant and animal species that can be used for recreation and/or sustenance, and recreation and education opportunities), could affect those environmental justice communities near the project, particularly the community located in Census Tract 9702.01, Block Group 3.⁹⁹ However, the total impacted wetland area for the project (89.9 acres) represents about 0.3% of the approximately 27,000 acres of wetlands contained within the HUC 12 watershed, in which

⁹³ Final EIS at 4-191 to 4-192, 4-198.

⁹⁴ Final EIS at 4-198.

⁹⁵ Final EIS at 4-191.

⁹⁶ Final EIS at 4-192, 4-194 to 4-198.

⁹⁷ Final EIS at 4-192.

⁹⁸ Final EIS at 4-194.

⁹⁹ See Final EIS at 4-194.

the project is located.¹⁰⁰ In addition, through implementation of the measures in Commonwealth's revised *Workspace Restoration Plan* and project-specific *Wetland and Waterbody Construction and Mitigation Procedures* and Commonwealth's compliance with Clean Water Act permitting,¹⁰¹ impacts on wetlands would be minimized and mitigated and would not have a significant impact on environmental justice communities.¹⁰² Environmental justice communities in the study area would experience cumulative impacts on wetlands; however, cumulative impacts on wetlands would be less than significant.¹⁰³ We agree with staff's conclusions.

b. Surface Water

53. Regarding surface water, the final EIS finds that construction and operation of the terminal would permanently impact two unnamed waterbodies (a drainage ditch and a tidal slough) within the project area and would both temporarily (during construction) and permanently (during operation) impact portions of the adjacent Calcasieu Ship Channel.¹⁰⁴ As stated in the final EIS, these impacts would result from dredging activities, site construction, marine traffic, stormwater runoff, water use, hydrostatic testing, and could occur from accidental spills or other releases of hazardous substances.¹⁰⁵ Environmental justice communities in proximity to the project, particularly the community located in Census Tract 9702.01, Block Group 3, would be affected most by dredging and resuspension of sediments. Commonwealth would attempt to minimize waterbody impacts by minimizing the amount of dredging needed within the Calcasieu Ship Channel.¹⁰⁶ Further, Commonwealth would minimize impacts on water quality by using a hydraulic suction dredge, where turbidity would be focused close to the river bottom and would equate to a storm event within a short distance of the cutterhead. The final EIS concludes impacts on environmental justice communities related to surface water would not be significant.¹⁰⁷ Environmental justice communities in the study area would experience

¹⁰⁰ Final EIS at 4-194.

¹⁰¹ See Final EIS at section 4.4.2.

¹⁰² Final EIS at 4-194.

¹⁰³ Final EIS at 4-383 to 4-384.

¹⁰⁴ Final EIS at 4-194.

¹⁰⁵ Final EIS at 4-194.

¹⁰⁶ Final EIS at 4-194.

¹⁰⁷ Final EIS at 4-194.

cumulative impacts on surface water; however, these impacts would be less than significant.¹⁰⁸ We agree.

54. As stated in the final EIS, construction and operation of the terminal, as well as marine traffic to and from the terminal, have the potential to adversely impact water quality in the event of an accidental release of a hazardous substance such as fuel, lubricants, coolants, or other material.¹⁰⁹ Environmental condition 1 in the appendix of this order requires Commonwealth to implement the measures outlined in the FERC's *Upland Erosion Control, Revegetation and Maintenance Plan* and Commonwealth's *Wetland and Waterbody Construction and Mitigation Procedures* to minimize the likelihood of a spill and to implement its *Spill Prevention and Response Plan* in the event of a spill. If an accidental release were to occur, environmental justice communities along the ship channel, particularly the community in Census Tract 9702.01, Block Group 3, as well as individuals from these communities that use the channel, would be affected.¹¹⁰ With the mitigation measures, the final EIS concludes that environmental justice communities would not be significantly impacted by an accidental release.¹¹¹

55. EPA comments that the Commission should provide a brief discussion of the potential impact and mitigation measures for any potential induced flooding to the adjacent environmental justice communities associated with the construction of proposed project facilities, holistically.¹¹² The final EIS states the terminal is in a FEMA floodplain and the area inside the storm surge wall would encompass 84.5 acres and 1.4 million cubic meters within the floodplain.¹¹³ The area within the storm surge wall would represent 0.15 % of the total acres in the watersheds in which the project is located. In an average storm surge, the volume displaced by the area within the storm surge walls would represent 0.13 % of the overall floodplain capacity. The final EIS concludes that impacts are very small in relation to the overall floodplain and would not be expected to impact flooding.¹¹⁴ Therefore, impacts on environmental justice communities due to induced flooding are not anticipated.

¹⁰⁸ Final EIS at 4-384.

¹⁰⁹ Final EIS at 4-194.

¹¹⁰ Final EIS at 4-194.

¹¹¹ Final EIS at 4-194.

¹¹² EPA October 14, 2022 Comments at 1-2.

¹¹³ Final EIS at 4-78.

¹¹⁴ Final EIS at 4-78.

c. Aquatic Resources

56. Recreational and commercial fishing could be impacted by construction activities associated with the terminal. As stated in the final EIS, project activities are anticipated to occur during peak fishing and recreational seasons; however, due to the overall size of the waterway and access to and maneuverability within the Calcasieu Ship Channel, fishing and recreational activities would not be significantly affected by the proposed use of barges.¹¹⁵ Temporary impacts on recreational and commercial users in the Calcasieu Ship Channel, who would likely include individuals from environmental justice communities, may occur in construction areas.¹¹⁶ Permanent impacts on recreational and commercial fisheries in the ship channel, as well as on individuals from environmental justice communities, may occur due to the loss of available fishing areas from operation of the marine facilities and LNG carrier traffic. However, although the final EIS finds that fish, crab, and shrimp species common to the bay could be present, the area in which project activities occur does not have any unique features or habitat characteristics that would draw recreational or commercial users to this particular location versus other locations within the Calcasieu Ship Channel.¹¹⁷ Given these characteristics, and due to the overall size of the waterway, the final EIS concludes that these impacts on environmental justice communities would not be significant.¹¹⁸ Environmental justice communities in the study area would experience cumulative impacts on aquatic resources; however, these impacts would be less than significant.¹¹⁹ We agree.

d. Tourism

57. The EIS finds that no significant impacts on tourism are anticipated from the project for environmental justice communities.¹²⁰ As stated in the EIS, the main tourist attraction near the terminal is Holly Beach.¹²¹ There are several access points to Holly Beach near the terminal that may experience visual and/or noise impacts. Given these impacts, Holly Beach users may choose to access the beach near the town, which is

¹¹⁵ Final EIS at 4-195.

¹¹⁶ Final EIS at 4-195.

¹¹⁷ Final EIS at 4-195.

¹¹⁸ Final EIS at 4-195.

¹¹⁹ Final EIS at 4-384.

¹²⁰ Final EIS at 4-196.

¹²¹ Final EIS at 4-196.

further from the site and would not be subject to significant visual or noise impacts. Given the availability of alternate areas on Holly Beach, further from the facility, the final EIS concludes that a decrease in visits would not be anticipated and impacts on environmental justice communities associated with tourism (e.g. loss of revenue from tourism) would not be significant.¹²² Environmental justice communities in the study area would experience cumulative impacts on tourism; however, these impacts would be less than significant.¹²³ We agree with these conclusions.

e. **Socioeconomics**

58. Regarding socioeconomics, as stated in the EIS, the temporary influx of workers/contractors into the area could increase the demand for community services, such as housing, police enforcement, and medical care.¹²⁴ An influx of workers could also affect economic conditions and other community infrastructure. However, sufficient housing units would be available and impacts on community services would be mitigated.¹²⁵ Based on the foregoing, the final EIS concludes that socioeconomic impacts on environmental justice communities would be less than significant.¹²⁶ EPA recommends that the Commission “conduct a socioeconomic cost analysis of financial impact to the historically overburden and disadvantage populations due to increase in property taxes, material goods, housing, etc.”¹²⁷ As stated in the final EIS, several large LNG terminal projects have been proposed or approved that could have overlapping construction schedules with the Commonwealth LNG Project including Cameron LNG Expansion, Driftwood LNG, Lake Charles LNG, and CP2 LNG.¹²⁸ Combined, these additional projects could require a peak of more than 20,000 workers, a 10 percent increase in the current population.¹²⁹ The temporary flux of workers/contractors into the area from all of these projects would increase the demand for housing. Should other major industrial projects listed in table 4.13-2 of the final EIS be constructed at the same

¹²² Final EIS at 4-196.

¹²³ Final EIS at 4-384.

¹²⁴ Final EIS at 4-196.

¹²⁵ Final EIS at 4-180 & 4-182 to 4-184.

¹²⁶ Final EIS at 4-196.

¹²⁷ EPA October 14, 2022 Comments at 2.

¹²⁸ Final EIS at 4-385.

¹²⁹ Final EIS at 4-385.

time as Commonwealth, 3,500 units would still be available.¹³⁰ This cumulative increased demand for housing could drive costs up, increase property taxes, and adversely impact low-income individuals.¹³¹ An increase in costs of material goods may also occur due to increased demand for these goods. However, impacts on property values, property taxes, and costs of material goods from the project alone are not anticipated. Consequently, while environmental justice communities in the study area would experience cumulative impacts on socioeconomic resources, these impacts would be less than significant.¹³² We agree with staff's conclusions.

f. Road and Marine Traffic

59. The final EIS finds that area residents may be affected by traffic delays during construction of the project.¹³³ Project construction would temporarily increase use of area roads by heavy construction equipment and associated trucks and vehicles. Increased use of these roads would result in a higher volume of traffic, increased commute times, and greater risk of vehicle accidents.¹³⁴ These impacts would most likely affect environmental justice communities near the project, such as Cameron (Census Tract 9702.01 Block Group 3) and Hackberry (Census Tract 9702.01 Block Group 1), as well as those communities to the north where workers would most likely find housing.¹³⁵ Commonwealth would implement mitigation measures to alleviate any potential road congestion during construction, including the use of bus lots in Carlyss, Louisiana, and the establishment of temporary travel lanes and the use of flaggers and signs, as necessary, to ensure the safety of local traffic.¹³⁶ Once construction is complete, Commonwealth estimates that operation would average about 75 light vehicles per day and 10 heavy vehicles (i.e., trucks) per day. The project would not result in a change in the roadway

¹³⁰ Final EIS at 4-385 to 4-386.

¹³¹ Final EIS at 4-385 to 4-386.

¹³² Final EIS at 4-385 to 4-386.

¹³³ Final EIS at 4-196.

¹³⁴ Final EIS at 4-196.

¹³⁵ Final EIS at 4-196.

¹³⁶ Final EIS at 4-196.

level of service¹³⁷ for any of the area roadways during construction or operation.¹³⁸ Therefore, the final EIS concludes that traffic impacts on environmental justice communities would be less than significant.¹³⁹ Environmental justice communities in the study area would experience cumulative impacts associated with traffic; however, these impacts would be less than significant.¹⁴⁰ EPA recommends the Commission ensures the alternative plan for crossing Highway 27/82 would not further disproportionately adversely impact the environmental justice populations near the proposed Project.¹⁴¹ This crossing location is not located within an environmental justice community (Census Tract 9702.01, Block Group 2) and impacts would be localized and would not have an impact on environmental justice communities.

60. As stated in the EIS, barge deliveries would occur throughout the project's 36- to 38-month construction period, with a higher number of deliveries expected to occur during certain phases of construction.¹⁴² During operations, up to 156 LNG carriers would call at the terminal per year.¹⁴³ Because the terminal site is near the mouth of the ship channel, the final EIS concludes that barge deliveries would not result in significant impacts on marine traffic in the ship channel.¹⁴⁴ In addition, the final EIS concludes that recreational boaters and fishers, which likely include individuals from environmental justice communities, would not experience significant changes in marine traffic.¹⁴⁵ We agree.

g. Noise

61. As stated in the final EIS, noise levels above ambient conditions, attributable to construction activities, would vary over time and would depend upon the nature of the

¹³⁷ Level of service (LOS) is a term used to describe the operating conditions of a roadway based on factors such as speed, travel time, maneuverability, delay, and safety.

¹³⁸ Final EIS at 4-196.

¹³⁹ Final EIS at 4-196 to 4-197.

¹⁴⁰ Final EIS at 4-386 to 4-387.

¹⁴¹ EPA October 14, 2022 Comments at 2.

¹⁴² Final EIS at 4-197.

¹⁴³ Final EIS at 4-197.

¹⁴⁴ Final EIS at 4-197.

¹⁴⁵ Final EIS at 4-197.

construction activity, the number and type of equipment operating, and the distance between sources and receptors.¹⁴⁶ The closest noise sensitive area (NSA) located within an environmental justice community (Census Tract 9702.01 Block Group 3) is about 3,300 feet east of the proposed terminal site and is a set of buildings on the southern tip of Monkey Island used to house Calcasieu Ship Channel pilots.¹⁴⁷ Peak construction noise related to project activities would increase noise levels over ambient by 7 decibels on the A-weighted scale at this NSA and would be temporary. The majority of construction activities at the terminal would occur during daytime hours and prior to 10 p.m., with the exception of dredging activities. As recommended in the final EIS,¹⁴⁸ environmental conditions 19 and 20 in the appendix to this order require that Commonwealth monitor noise levels between 7 p.m. to 7 a.m. to ensure noise levels during these hours are less than our criterion of 48.6 decibels on the A-weighted scale at the nearest NSA (see environmental condition 18 in the appendix to this order). Operational noise associated with the terminal site would be persistent and would increase noise levels over ambient by about 3 decibels at the closest NSA. In addition, as recommended in the final EIS,¹⁴⁹ environmental conditions 19 and 20 in the appendix to this order require Commonwealth to meet sound level requirements. The final EIS concludes that the project would not result in significant noise impacts on local residents and the surrounding communities, including environmental justice populations.¹⁵⁰ Environmental justice communities in the study area would experience cumulative impacts related to noise; however, these impacts would be less than significant.¹⁵¹ We agree.

h. Air Quality

62. As explained in the final EIS, construction and operation of the terminal site would result in long-term impacts on air quality.¹⁵² Construction air emissions from the project, when considered with current background concentrations, would be below the National Ambient Air Quality Standards (NAAQS), which are designated to protect public health. Environmental condition 1 in the appendix to this order requires Commonwealth to

¹⁴⁶ Final EIS at 4-197.

¹⁴⁷ Final EIS at 4-197.

¹⁴⁸ Final EIS at 4-241.

¹⁴⁹ Final EIS at 4-245.

¹⁵⁰ Final EIS at 4-197.

¹⁵¹ Final EIS at 4-387.

¹⁵² Final EIS at 4-197.

mitigate exhaust emissions during construction by using construction equipment and vehicles that comply with EPA mobile and non-road emission regulations, and usage of commercial gasoline and diesel fuel products that meet specifications of applicable federal and state air pollution control regulations. Further, environmental condition 1 in the appendix to this order requires Commonwealth to mitigate fugitive dust by applying water to the roadways and reducing vehicle speeds. The final EIS concludes that construction-related impacts on local air quality would not be significant.¹⁵³

63. The final EIS states that Commonwealth conducted air dispersion modeling to assess operational air quality impacts and show compliance with applicable NAAQS and Class II Prevention of Significant Deterioration (PSD) Increments for the pollutants subject to PSD review.¹⁵⁴ Additionally, staff modeled the impacts of mobile sources (LNG carriers and tugs) in addition to the PSD and NAAQS modeling required by the state. The cumulative modeling indicated that operation of the project (including LNG terminal stationary sources and mobile sources) may contribute to a potential nitrogen dioxide (NO₂) 1-hour NAAQS exceedance; however, the project's contribution (including LNG stationary and mobile sources) would be less than the significant impact level at each exceedance location.¹⁵⁵ A majority of these potential exceedances within the modeled area would be within environmental justice communities.¹⁵⁶ Commonwealth's contribution to all exceedances is estimated to be less than the significant impact level at all exceedance locations. Although the project would be in compliance with the NAAQS and the NAAQS are designated to protect sensitive populations, the final EIS acknowledges that NAAQS attainment alone may not ensure there is no localized harm to such populations due to project emissions of volatile organic compounds, hazardous air pollutants, as well as issues such as the presence of non-project related pollution sources, local health risk factors, disease prevalence, and access (or lack thereof) to adequate care.¹⁵⁷ The final EIS concludes that the project would not cause or significantly contribute to a potential exceedance of the NAAQS and would not result in significant impacts on air quality in the region.¹⁵⁸ Environmental justice communities in the study area would experience

¹⁵³ Final EIS at 4-197.

¹⁵⁴ Final EIS at 4-198.

¹⁵⁵ Final EIS at 4-198.

¹⁵⁶ Final EIS at 4-198.

¹⁵⁷ Final EIS at 4-198.

¹⁵⁸ Final EIS at 4-198.

cumulative impacts on air quality; however, these impacts would be less than significant.¹⁵⁹ We agree.

i. **Safety**

64. Commission staff evaluated potential impacts from incidents identified along the LNG marine vessel transit route and at the LNG terminal, including potential impacts to people with access and functional needs as defined in National Fire Protection Association (NFPA) 1600, Standard on Continuity, Emergency, and Crisis Management¹⁶⁰ and NFPA 1616, Standard on Mass Evacuation, Sheltering, and Re-Entry Programs.¹⁶¹ The worst-case distances from these potential incidents would potentially impact three block groups, two of which are considered environmental justice communities. The block groups located with environmental justice communities that exceed the thresholds for minority and low income would include Census Tract 9702.01, Block Group 3 (based on the low-income threshold); and Census Tract 9701, Block Group 1 (based on the minority threshold).¹⁶²

65. Should a catastrophic incident or other more likely emergency occur at the Commonwealth LNG terminal or at the LNG marine vessel along its route, people in environmental justice communities, including those with access and functional needs, could experience significant public safety impacts. However, Commission staff has determined that the risk (i.e., likelihood and consequence) of accidental and intentional events would be less than significant with implementation of the proposed safety and security measures recommendations. We agree and adopt all recommendations herein as Environmental Conditions 21 through 128, including the additional Environmental Condition on emergency response as a result of the PHMSA LOD. These measures further enhance the safety and security of the engineering design of the layers of protection for review subject to the approval by Commission staff and in accordance with recommended and generally accepted good engineering practices, which go above the minimum federal safety standards for the LNG terminal and LNG marine vessel promulgated in PHMSA and USCG regulations, such that they would further reduce the

¹⁵⁹ Final EIS at 4-387 to 4-388.

¹⁶⁰ Freely and publicly accessible to view in English and Spanish at NFPA, <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1600>, accessed March 2022.

¹⁶¹ Freely and publicly accessible to view in English only at NFPA, <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1616>, accessed March 2022. See Final EIS at 4-315.

¹⁶² Final EIS at 4-315.

risk of incidents impacting the public to less than significant levels, including impacts to environmental justice communities.¹⁶³ We agree with this conclusion. We encourage Commonwealth to engage with the two potentially impacted environmental justice communities¹⁶⁴ as it develops an Emergency Response Plan (ERP) in accordance with Environmental Condition 37.

j. Visual Impacts

66. Commonwealth disputes staff's significance finding on environmental justice communities for visual resources, stating the "only rationale for such a finding is that members of an environmental justice community may visit Holly Beach, and depending on where they access the beach, the project could be highly visible."¹⁶⁵ The LNG terminal would be constructed on marshland within the Calcasieu Ship channel and existing industrial sites to the east, sandy shoreline and the Gulf of Mexico to the south, marshland and the town of Holly Beach to the west, and marshland to the north. As stated in the final EIS, construction of the LNG terminal would result in a permanent change in the viewshed and would add an industrial element to the area.¹⁶⁶

67. Moreover, the final EIS explained that in addition to visual impacts on individuals from environmental justice communities who visit Holly Beach, the facility and associated project lighting will be visible from various locations within environmental justice communities. Specifically, daytime and nighttime visual renderings of the Commonwealth LNG terminal indicate that the facility and associated project lighting will be visible from environmental justice communities and up to distances of 10 miles from the terminal.¹⁶⁷ In addition, the facility would also be visible from portions of Census Tract 9702.01, Block Group 3, which is considered an environmental justice community and visible from the town of Cameron an environmental justice community 2.4 miles east across the ship channel. There are also several buildings at the southern tip of Monkey Island, within environmental justice Census Tract 9702.01, Block Group 3, that house Lake Charles ship pilots and their offices.¹⁶⁸ These buildings have a direct and

¹⁶³ Final EIS at 4-316.

¹⁶⁴ See *supra* P 64 (environmental justice communities in Census Tract 9702.01, Block Group 3 and Census Tract 9701, Block Group 1).

¹⁶⁵ Commonwealth October 27, 2022 Comments at 3.

¹⁶⁶ Final EIS at 4-195.

¹⁶⁷ See Final EIS at app. E, fig. E-3, E-7, & E-8.

¹⁶⁸ Final EIS at 4-195.

uninhibited view of the terminal site. The final EIS concludes that while the direct visual changes would be outside the boundaries of the identified environmental justice communities, the permanent changes in the viewshed would have a permanent and significant adverse effect on those environmental justice communities near the project.¹⁶⁹ We agree.

68. Commission staff also determined that environmental justice communities would experience significant cumulative visual impacts. Staff analyzed the cumulative impacts along the Calcasieu Ship Channel (including impacts from facilities in Cameron and just to the north of Cameron) and determined that the project would adversely contribute to visual impacts on users of the Calcasieu Ship Channel, users of Holly and Broussard Beaches, residents in the town of Cameron, and motorists along the Creole Nature Trail All-American Road.¹⁷⁰ While the extent of impacts would vary depending on the proximity to the sites, environmental justice communities may experience significant visual changes from the construction of additional sites, flares, lighting, and storage tanks for several miles. Daytime and nighttime visual renderings of the Commonwealth LNG terminal indicate that the project lights will be visible from environmental justice communities and up to distances of 10 miles from the terminal.¹⁷¹ In addition to the visual impacts from the Commonwealth LNG terminal, Calcasieu Pass (0.3 miles from the Project) and CP2 LNG (1.3 miles from the Project) will have clearly visible features from LNG storage tanks, flares, facility lighting, and LNG vessels. Additionally, Port Louisiana (1.1 miles from the Project) will contribute to visual impacts from loading cranes, industrial buildings, facility lighting, and vessels. Although the Commonwealth project is not located within an environmental justice block group, Calcasieu Pass, CP2 LNG, and Port Louisiana are located within environmental justice block groups (Census Tract 9702.01, Block Group 3 and Census Tract 9701.00, Block Group 1) along the Calcasieu Ship Channel and are located within 1.3 miles of the Project.¹⁷² The final EIS concluded, and we agree, that Commonwealth and the mentioned facilities will contribute to the surrounding area's heavy nighttime lighting and will detract from the overall quality of the scenic views of the surrounding area.¹⁷³

¹⁶⁹ Final EIS at 4-195.

¹⁷⁰ Final EIS at 4-172.

¹⁷¹ See Final EIS at fig. E-3, E-7, & E-8.

¹⁷² See Final EIS at fig. 4.9-1 & fig. 4.12-2.

¹⁷³ See Final EIS at 4-173.

k. Sufficiency of Cumulative Impacts Analysis

69. EPA comments that the Commission should assess the cumulative adverse environmental impact of the proposed project and other Commission projects on the environmental justice population.¹⁷⁴ Cumulative impacts were addressed in the final EIS and are noted above.¹⁷⁵ The final EIS concludes that environmental justice communities in the study area would experience less than significant adverse cumulative impacts on wetlands, surface water, aquatic resources, socioeconomics, traffic, noise, and air quality.¹⁷⁶ However, the final EIS concluded that adverse cumulative visual impacts related to the project and the additional projects within the geographic scope would be significant.¹⁷⁷ We agree with these conclusions.

I. Environmental Justice Conclusion

70. As described throughout the final EIS, the proposed project would have a range of impacts on the environment and on individuals living in the vicinity of the project facilities, including environmental justice populations. The closest environmental justice block groups are Census Tract 9702.01, Block Group 3 approximately 0.1 mile from the LNG terminal (with the closest residence, ship pilots' temporary housing, approximately 3,300 feet away) and Census Tract 9701, Block Group 1 approximately 2.7 miles from the pipeline.¹⁷⁸ The closest town within an environmental justice community is Cameron (within Census Tract 9702.01, Block Group 3) over 2 miles away.¹⁷⁹ The final EIS concludes that, with respect to the resources with potential impacts on environmental justice communities near the terminal, direct and cumulative visual impacts would be significant.¹⁸⁰ We agree.

71. Commonwealth states that the finding in the final EIS that impacts on environmental justice communities would be disproportionately high and adverse is not

¹⁷⁴ EPA October 14, 2022 Comments at 2.

¹⁷⁵ Final EIS at 4-383 to 4-388; *see also supra* PP 52-63, & 68.

¹⁷⁶ Final EIS at 4-388.

¹⁷⁷ Final EIS at 4-388.

¹⁷⁸ Final EIS at 4-198.

¹⁷⁹ Final EIS at 4-198.

¹⁸⁰ Final EIS at 4-198, 4-199, & 4-388.

well founded or justified.¹⁸¹ With respect to whether impacts on environmental justice communities would be disproportionately high and adverse, we clarify that only cumulative impacts to visual resources would be predominately borne by environmental justice communities and thus disproportionately high and adverse. All other direct and cumulative impacts would not be disproportionately high and adverse. While environmental justice and non-environmental justice block groups near the project's terminal would both experience significant direct and cumulative visual impacts, the cumulative visual impacts would be predominately borne by environmental justice communities due to the cumulative adverse visual impacts from this project when considered along with the visual impacts from Calcasieu Pass, CP2 LNG, and Port Louisiana, all of which are located within environmental justice block groups, as noted above. Due to these substantial light-emitting facilities (ranging from 230 to 672 acres in size) within and immediately adjacent to surrounding environmental justice communities, we conclude that cumulative visual impacts on environmental justice communities would be disproportionately high and adverse as these impacts would be predominantly borne by environmental justice communities.¹⁸²

72. EPA requests the Commission implement measures to mitigate, eliminate and/or avoid disproportionately high and adverse impacts to environmental justice communities.¹⁸³ As described above, direct and cumulative visual impacts on environmental justice communities near the terminal would be significant and cumulative visual impacts on environmental justice communities would be disproportionately high and adverse. Environmental condition 1 in the appendix of this order requires Commonwealth to implement the mitigation measures described in the Commonwealth Facility Lighting Plan, which would reduce visual impacts from facility lighting. Environmental condition 1 also requires Commonwealth to avoid disturbance of the native vegetation within the terminal exclusion buffer area, which will provide over 1,300 feet of vegetated buffer. However, the LNG facility is located within the Chenier Plain, which is almost treeless. To augment the native vegetation, environmental condition 1 requires Commonwealth to plant native sugarberry (*Celtis laevigata*) trees of 15-25- gallon size on 15-foot centers approximately 30 feet inside Commonwealth's exclusion fence for approximately 150 feet on the upland chenier area (i.e., their typical landscape position). Although these trees will provide some level of visual screening, the mature height of the native trees of the Chenier Plain is relatively low compared to the LNG facility's structures, which will still be visible. Although Commonwealth is required to implement the mitigation described above, significant direct and cumulative visual impacts would still occur and cumulative visual

¹⁸¹ Commonwealth October 27, 2022 Comments at 3-4.

¹⁸² See Final EIS at 4-199.

¹⁸³ EPA October 14, 2022 Comments at 1.

impacts on environmental justice communities would remain disproportionately high and adverse.

5. Greenhouse Gas Emissions and Climate Change

73. The CEQ defines effects or impacts as “changes to the human environment from the proposed action or alternatives that are reasonably foreseeable,” which include those effects that “occur at the same time and place” and those that “are later in time or farther removed in distance, but are still reasonably foreseeable.”¹⁸⁴ An impact is reasonably foreseeable if it is “sufficiently likely to occur such that a person of ordinary prudence would take it into account in reaching a decision.”¹⁸⁵

74. For this proposed action, the reasonably foreseeable and causally connected greenhouses gases (GHG) emissions are emissions associated with the project’s construction and operation. The final EIS estimates that construction of the project would result in 547,314 tons of carbon dioxide equivalent (CO₂e) emissions (equivalent to 496,515 metric tons of CO₂e) over the 4 years of construction, inclusive of pipeline, terminal, barge, and commissioning emissions.¹⁸⁶ GHG emissions from the operation of the project would result in an annual increase of CO₂e emissions of about 3,559,091 tons per year (tpy) (equivalent to 3,228,754 metric tpy).¹⁸⁷

75. The final EIS compared the project’s GHG emissions to the total GHG emissions of the United States as a whole and at the state level, which allows us to contextualize the project’s projected emissions.¹⁸⁸ In addition, our NEPA analysis included a qualitative analysis of the project’s climate impacts¹⁸⁹ and acknowledge that the project would increase the atmospheric concentration of GHGs, and would contribute cumulatively to climate change.¹⁹⁰ Additionally, when states, such as Louisiana, have GHG emissions reduction targets, we will compare a project’s GHG emissions to those state goals to

¹⁸⁴ 40 C.F.R. § 1508.1(g) (2021).

¹⁸⁵ 40 C.F.R. § 1508.1(aa).

¹⁸⁶ See Final EIS at 4-213 to 4-220, tbls. 4.11.1-4, 4.11.1-5, & 4.11.1-6.

¹⁸⁷ See Final EIS at 4-224, tbls. 4.11.1-7.

¹⁸⁸ Final EIS at 4-396 (finding that the project’s operational emissions could potentially increase CO₂ emissions based on the 2020 national levels by 0.06% and potentially increase CO₂e emissions based on Louisiana’s 2019 levels by 1.7%).

¹⁸⁹ Final EIS at 4-395.

¹⁹⁰ Final EIS at 4-396.

provide additional context.¹⁹¹ We have done so in the EIS.¹⁹² The calculation shows the percentage difference that the project's annual increase in CO₂e emissions would make towards the state's GHG reduction targets. The Commission does not determine whether an individual project's GHG emissions comply with the state's goals. Last, the final EIS disclosed the social cost of GHGs associated with the project's reasonably foreseeable GHG emissions.¹⁹³ By adopting the climate impact analysis in the EIS, we recognize that the project may release GHG emissions that contribute incrementally to future global climate change impacts,¹⁹⁴ and have identified climate change impacts in the region.¹⁹⁵ In light of this analysis, and because we are conducting a generic proceeding to determine whether and how the Commission will conduct significance determinations for GHG emissions going forward, the Commission is not herein characterizing these emissions as significant or insignificant.¹⁹⁶

76. NRDC urges the Commission to wait to conduct NEPA analysis until the Commission decides how it will determine the significance of GHG emissions.¹⁹⁷

¹⁹¹ See *Tex. E. Transmission, LP*, 180 FERC ¶ 61,186, at P 28 (2022) and *Golden Pass Pipeline, LLC*, 180 FERC ¶ 61,058, at P 21 (2022).

¹⁹² Final EIS at 4-396 to 397 (finding that the project's GHG emissions from the operation of the terminal would represent 3.2% of Louisiana's 2030 projected GHG emission levels, assuming Louisiana achieves its planned reductions from the state's 2005 levels).

¹⁹³ Final EIS at 4-397 to 4-398.

¹⁹⁴ Final EIS at 4-396.

¹⁹⁵ Final EIS at 4-395.

¹⁹⁶ On February 17, 2022, the Commission issued the Updated Certificate Policy Statement and an Interim GHG Policy Statement. *Certification of New Interstate Nat. Gas Facilities Consideration of Greenhouse Gas Emissions in Nat. Gas Infrastructure Project Revs.*, 178 FERC ¶ 61,197 (2022). The Interim GHG Policy Statement established a NEPA significance threshold of 100,000 tons per year of carbon-dioxide-equivalent (CO₂e) as a matter of policy, which was meant to serve as interim guidance for project applicants and stakeholders and the Commission sought public comment on the statement. On March 24, 2022, the Commission, upon further consideration, made both statements draft and stated that it would not apply either statement to pending or new projects until the Commission issues any final guidance after public comment. *Interim GHG Policy Statement*, 178 FERC ¶ 61,197 at P 2.

¹⁹⁷ NRDC May 23, 2022 Comments at 25-27.

However, the Commission has sufficient information to proceed. It has quantified and contextualized the project's construction and operational GHG emissions,¹⁹⁸ recognized that the project's contributions to GHG emissions will incrementally contribute to future global climate change impacts, and described those potential impacts in the region. Having substantively complied with NEPA, it is reasonable for the Commission to act on Commonwealth's application.¹⁹⁹

77. Commenters generally assert that the Commission should analyze GHG emissions relating to upstream production and downstream consumption of the natural gas that would be exported from the Commonwealth LNG Project facilities.²⁰⁰ As we have repeatedly held,²⁰¹ under *Sierra Club v. FERC (Freeport)*,²⁰² the Commission need not consider the effects of upstream production or downstream transportation, consumption, or combustion of exported gas because the DOE's "independent decision to allow exports . . . breaks the NEPA causal chain and absolves the Commission of responsibility to include [these considerations] in its NEPA analysis."²⁰³

78. The Environmental Coalition argues that the Commission must still consider upstream and downstream emissions because (1) the analysis would inform Commission decisionmaking on whether to require additional mitigation or avoidance of direct effects at the terminal site²⁰⁴ and (2) "DOE's evaluation of Commonwealth LNG's exports is a

¹⁹⁸ *WildEarth Guardians v. Jewell*, 738 F.3d 298, 309 (D.C. Cir. 2013).

¹⁹⁹ See e.g., *Columbia Gulf Transmission, LLC*, 180 FERC ¶ 61,206, at P 87 & n.206 (2022); see also, e.g., *Sierra Club v. FERC*, 38 F.4th 220, 226 (D.C. Cir. 2022) ("NEPA requires agencies to 'take a hard look at the environmental consequences before taking a major action.'") (quoting *Balt. Gas & Elec. Co. v. Nat. Resources Def. Council, Inc.*, 462 U.S. 87, 97 (1983) (internal quotation marks omitted)); *Del. Riverkeeper Network*, 45 F.4th at 108 ("An agency's compliance with NEPA's requirements is also reviewed under the APA's arbitrary and capricious standard.") (citation omitted).

²⁰⁰ Final EIS at 4-398. See, e.g., EPA May 23, 2022 Comments at 2; Environmental Coalition May 23, 2022 Comments at 16, 19-20.

²⁰¹ See *Columbia Gulf Transmission, LLC*, 178 FERC ¶ 61,198, at P 46, order on reh'g, 180 FERC ¶ 61,206, at P 78 (2022).

²⁰² 827 F.3d 36.

²⁰³ *Id.* at 48; see also Final EIS at 4-398 (citing *Freeport*, 148 FERC ¶ 61,076).

²⁰⁴ Environmental Coalition May 23, 2022 Comments at 19 (citing 15 U.S.C. § 717b(e)(3)(A)).

connected action that cannot be segmented from FERC’s review of the terminal project, and FERC, as lead agency, must inform DOE’s decisionmaking as well.”²⁰⁵ Specifically, the Environmental Coalition asserts that a comprehensive analysis of related project impacts could persuade the Commission that the project’s direct impacts rise to the level of significance when combined with the indirect impacts of DOE’s connected action, which could then persuade the Commission to require additional mitigation of those direct impacts (for example, by requiring carbon capture and sequestration).²⁰⁶ The Environmental Coalition also states that the *Freeport* court explicitly declined to analyze whether the Commission’s responsibility under the NGA to act as “lead agency” or the prohibition against segmentation of NEPA analysis of interconnected actions requires the Commission to consider indirect upstream and downstream impacts.²⁰⁷

79. NRDC states that the Commission cannot defer climate analysis to DOE, especially as DOE has disclaimed authority to consider upstream impacts from export-induced gas production, and must consider the global emissions of the project, citing CEQ’s April 2022 final rule that restored the 1978 definition of “effects” under NEPA.²⁰⁸

80. We are not persuaded that these arguments lead to a different outcome than the court reached in *Freeport*. As we have recently explained in response to similar arguments:

NGA section 15(b)(1) directs the Commission to act as “lead agency for the purposes of coordinating all applicable Federal authorizations and for the purposes of complying with the National Environmental Policy Act.” Although the lead agency supervises the preparation of the environmental document where more than one federal agency is involved, the “lead agency” designation does not alter the scope of the project before the Commission either for approval or

²⁰⁵ Environmental Coalition May 23, 2022 Comments at 16, 19-21. The Environmental Coalition further argues that *Freeport* was wrongly decided. *Id.* at 16-19. The Commission is not free to ignore controlling precedent, as the comments acknowledge, and declines to ask the D.C. Circuit to clarify or overrule *Freeport*. *Id.* at 17, 19 (“[W]e do not contend that FERC can disregard D.C. Circuit cases that have not been overruled.”). The Environmental Coalition also urges the Commission to include this information on a voluntary basis to “provide important information to the public and to cooperating agency decisionmakers.” *Id.* at 16. We decline to do so.

²⁰⁶ Environmental Coalition May 23, 2022 Comments at 16, 19-20.

²⁰⁷ Environmental Coalition May 23, 2022 Comments at 16, 20.

²⁰⁸ NRDC May 23, 2022 Comments at 27-29.

environmental review. Nor does the lead agency role make the Commission responsible for ensuring a cooperating federal agency's compliance with its own NEPA responsibilities.²⁰⁹

81. Here, the project before the Commission is the construction and operation of facilities under section 3 of the NGA to export natural gas to foreign countries. The Commission fulfilled its role as lead agency in the NEPA review by publishing the final EIS on September 9, 2022 and by our analysis here. DOE participated as a cooperating agency in the creation of the EIS. As the agency responsible for authorizing exports, DOE is responsible for determining its obligations and providing appropriate supplemental environmental analysis should DOE decide to authorize exports from the proposed project to non-FTA nations.²¹⁰

82. Additionally, "the requirement that an agency consider connected actions in a single environmental document is to 'prevent agencies from dividing one project into multiple individual actions' with less significant environmental effects."²¹¹ As discussed above, the proposal before the Commission is to site, construct, and operate the Commonwealth LNG Project, a natural gas liquefaction and export facility. The export of natural gas was proposed before, and authorized by, DOE, not the Commission.

83. Finally, the NEPA review of project was prepared pursuant to the 1978 regulations; therefore, the Commonwealth LNG EIS is consistent with the April 2022 final rule that NRDC cites.

6. Environmental Impacts Conclusion

84. We have reviewed the information and analysis contained in the final EIS regarding the potential environmental effects of the project, as well as the other information in the record. We are accepting the environmental recommendations in the final EIS as modified herein, and are including them as conditions in Appendix A to this order. Based on our consideration of this information and the discussion above, we agree with the conclusions presented in the final EIS and find that the project, if implemented as described in the final EIS, is an environmentally acceptable action.

²⁰⁹ *Columbia Gulf Transmission, LLC*, 180 FERC ¶ 61,206, at P 82 (2022) (citations omitted) (analyzing section 7 facilities supporting LNG terminal).

²¹⁰ As noted above, Commonwealth's LNG application is pending with DOE.

²¹¹ *Columbia Gulf Transmission, LLC*, 180 FERC ¶ 61,206 at P 83 (quoting *Myersville Citizens for a Rural Cnty., Inc. v. FERC*, 783 F.3d at 1326).

IV. Conclusion

85. For the reasons discussed above, we find that the project is not inconsistent with the public interest, and we will grant Commonwealth's application for authorization under section 3 of the NGA to site, construct, and operate its proposed project.

86. Compliance with the environmental conditions appended to our orders is integral to ensuring that the environmental impacts of approved projects are consistent with those anticipated by our environmental analyses. Thus, Commission staff carefully reviews all information submitted, and will issue a notice to proceed with a particular activity only when satisfied that the applicant has complied with all applicable conditions. We also note that the Commission has the authority to take whatever steps are necessary to ensure the protection of environmental resources during construction and operation of the project, including authority to impose any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the order, as well as the avoidance or mitigation of unforeseen adverse environmental impacts resulting from project construction and operation.

87. Any state or local permits issued with respect to the jurisdictional facilities authorized herein must be consistent with the conditions of this authorization. The Commission encourages cooperation between applicants and local authorities. However, this does not mean that state and local agencies through application of state or local laws, may prohibit or unreasonably delay the construction or operation of facilities approved by this Commission.²¹²

88. The Commission on its own motion received and made a part of the record in this proceeding all evidence, including the application, and exhibits thereto, and comments, and upon consideration of the record.

²¹² See 15 U.S.C. § 717r(d) (state or federal agency's failure to act on a permit considered to be inconsistent with Federal law); see also *Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293, 310 (1988) (state regulation that interferes with FERC's regulatory authority over the transportation of natural gas is preempted) and *Dominion Transmission, Inc. v. Summers*, 723 F.3d 238, 245 (D.C. Cir. 2013) (noting that state and local regulation is preempted by the NGA to the extent it conflicts with federal regulation, or would delay the construction and operation of facilities approved by the Commission).

The Commission orders:

(A) Commonwealth is authorized under section 3 of the NGA to site, construct, and operate its Commonwealth LNG Project, as described and conditioned herein and as more fully described in its application and supplements, including any commitments made therein, subject to the environmental conditions contained in the appendix to this order.

(B) Commonwealth's proposed facilities shall be constructed and made available for service within five years of the date of this order.

(C) Commonwealth shall notify the Commission's environmental staff by telephone or e-mail of any environmental noncompliance identified by other federal, state, or local agencies on the same day that such agency notifies Commonwealth. Commonwealth shall file written confirmation of such notification with the Secretary of the Commission within 24 hours.

By the Commission. Chairman Glick is concurring with a separate statement attached.
Commissioner Danly is concurring in part with a separate statement attached.
Commissioner Clements is concurring with a separate statement attached.
Commissioner Phillips is concurring with a separate statement attached.

(S E A L)

Kimberly D. Bose,
Secretary.

Appendix A

Environmental Conditions

As recommended in the final environmental impact statement (final EIS) and otherwise amended herein, this authorization includes the following conditions.

1. Commonwealth LNG, LLC (Commonwealth) shall follow the construction procedures and mitigation measures described in its application and supplements, including responses to staff data requests and as identified in the EIS, unless modified by the Order. Commonwealth must:
 - a. request any modification to these procedures, measures, or conditions in a filing with the Secretary of the Commission (Secretary);
 - b. justify each modification relative to site-specific conditions;
 - c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
 - d. receive approval in writing from the Director of the Office of Energy Projects (OEP), or the Director's designee, **before using that modification.**
2. The Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, and take whatever steps are necessary to ensure the protection of life, health, property, and the environment during construction and operation of the Commonwealth LNG Project (Project). This authority shall allow:
 - a. the modification of conditions of the Order;
 - b. stop-work authority and authority to cease operation; and
 - c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of unforeseen adverse environmental impacts resulting from Project construction and operation.
3. **Prior to any construction**, Commonwealth shall file an affirmative statement with the Secretary, certified by senior company officials, that all company personnel, environmental inspectors (EI), and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.

4. The authorized facility locations shall be as shown in the EIS, as supplemented by filed plot plans, alignment sheets, and facility diagrams. **As soon as they are available, and before the start of construction**, Commonwealth shall file with the Secretary any revised detailed plans, diagrams, and alignment sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must specify locations designated on these plans, diagrams, and alignment sheets.
5. Commonwealth shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed that have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use or cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps, or aerial photographs. Use of each area must be approved in writing by the Director of OEP, or the Director's designee, **before construction in or near that area**.

This requirement does not apply to extra workspace allowed by the Commission's *Upland Erosion Control, Revegetation, and Maintenance Plan* and/or minor field realignments per landowner needs and requirements which do not affect other landowners or sensitive environmental areas such as wetlands.

Examples of alterations requiring approval include all route alignments and facility location changes resulting from:

- a. implementation of cultural resources mitigation measures;
- b. implementation of endangered, threatened, or special concern mitigation measures;
- c. recommendations by state regulatory authorities; and
- d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.

6. **At least 60 days before construction begins**, Commonwealth shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP, or the Director's designee. Commonwealth must file revisions to the plan as schedules change. The plan shall identify:

- a. how Commonwealth will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EIS, and required by the Order;
 - b. how Commonwealth will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
 - c. the number of EIs assigned, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
 - d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
 - e. the location and dates of the environmental compliance training and instructions Commonwealth will give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel change), with the opportunity for OEP staff to participate in the training session(s);
 - f. the company personnel (if known) and specific portion of Commonwealth's organization having responsibility for compliance;
 - g. the procedures (including use of contract penalties) Commonwealth will follow if noncompliance occurs; and
 - i. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:
 - ii. the completion of all required surveys and reports;
 - iii. the environmental compliance training of onsite personnel;
 - iv. the start of construction; and
 - v. the start and completion of restoration.
7. Commonwealth shall employ at least one EI for the Project. The EI(s) shall be:
- a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;
 - b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;

- c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;
 - d. a full-time position, separate from all other activity inspectors;
 - e. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
 - f. responsible for maintaining status reports.
8. Beginning with the filing of its Implementation Plan, Commonwealth shall file updated status reports with the Secretary on a **monthly** basis until all construction and restoration activities are complete. Problems of a significant magnitude shall be reported to the FERC **within 24 hours**. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
- a. an update on Commonwealth's efforts to obtain the necessary federal authorizations;
 - b. project schedule, including current construction status of the project and work planned for the following reporting period;
 - c. listing of all problems encountered, contractor nonconformance/deficiency logs, and each instance of noncompliance observed by the EI during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
 - d. a description of the corrective and remedial actions implemented in response to all instances of noncompliance, nonconformance, or deficiency;
 - e. the effectiveness of all corrective and remedial actions implemented;
 - f. a description of any landowner/resident complaints which may relate to compliance with the requirements of the order, and the measures taken to satisfy their concerns; and
 - g. copies of any correspondence received by Commonwealth from other federal, state, or local permitting agencies concerning instances of noncompliance, and Commonwealth's response.
9. Commonwealth shall develop and implement an environmental complaint resolution procedure, and file such procedure with the Secretary, for review and approval by the Director of OEP, or the Director's designee. The procedure shall

provide landowners with clear and simple directions for identifying and resolving their environmental mitigation problems/concerns during construction of the project and restoration of the right-of-way. Prior to construction, Commonwealth shall mail the complaint procedures to each landowner whose property will be crossed by the project.

a. In its letter to affected landowners, Commonwealth shall:

- i. provide a local contact that the landowners should call first with their concerns; the letter should indicate how soon a landowner should expect a response;
- ii. instruct the landowners that if they are not satisfied with the response, they should call Commonwealth's Hotline; the letter should indicate how soon to expect a response; and
- iii. instruct the landowners that if they are still not satisfied with the response from Commonwealth's Hotline, they should contact the Commission's Landowner Helpline at 877-337-2237 or at LandownerHelp@ferc.gov.

b. In addition, Commonwealth shall include in its monthly status report a copy of a table that contains the following information for each problem/concern:

- i. the identity of the caller and date of the call;
 - ii. the location by milepost and identification number from the authorized alignment sheet(s) of the affected property;
 - iii. a description of the problem/concern; and
10. All conditions attached to the water quality certification issued by Louisiana Department of Environmental Quality constitute mandatory conditions of this Authorization Order. **Prior to construction**, Commonwealth shall file, for review and written approval of the Director of OEP, or the Director's designee, any revisions to its project design necessary to comply with the water quality certification conditions.
11. Commonwealth must receive written authorization from the Director of OEP, or the Director's designee, **before commencing construction** of any Project facilities. To obtain such authorization, Commonwealth must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).

12. Commonwealth must receive written authorization from the Director of OEP, or the Director's designee, **prior to introducing hazardous fluids** into the Project facilities. Instrumentation and controls, hazard detection, hazard control, and security components/systems necessary for the safe introduction of such fluids shall be installed and functional.
13. Commonwealth must receive written authorization from the Director of OEP, or the Director's designee, **before placing into service** the Project facilities. Such authorization will only be granted following a determination that the facilities have been constructed in accordance with FERC approval, can be expected to operate safely as designed, and the rehabilitation and restoration of areas affected by the project are proceeding satisfactorily.
14. **Within 30 days of placing the authorized facilities in service**, Commonwealth shall file an affirmative statement with the Secretary, certified by a senior company official:
 - a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
 - b. identifying which of the conditions in the Order Commonwealth has complied with or will comply with. This statement shall also identify any areas affected by the project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.
15. **Prior to construction of the Project Pipeline**, Commonwealth shall file with the Secretary for review and written approval by the Director of OEP, or the Director's designee, an alternative contingency plan for crossing Highway 27/82 in the event that Commonwealth is unable to successfully complete the proposed horizontal directional drill of Highway 27/82. Commonwealth shall develop the contingency plan in consultation with the Louisiana Department of Transportation and Development.
16. Commonwealth shall successfully complete the Highway 27/82 crossing **prior to the start of construction of the remainder of the Project Pipeline**.
17. **Prior to construction of the Project**, Commonwealth shall file with the Secretary a copy of the determination of consistency with the Coastal Zone Management Program issued by the Louisiana Department of Natural Resources.
18. During construction activities at the Terminal, Commonwealth shall monitor noise levels **between 7:00 p.m. and 7:00 a.m.**, document the noise levels in the construction status reports, and restrict the noise attributable to construction activities to no more than 55 A-weighted decibel (dBA) day-night sound level (L_{dn}) (48.6 dBA total noise impacts) at noise sensitive areas (NSA) 1 and 2.

19. Commonwealth shall file a full power load noise survey with the Secretary for the Terminal **no later than 60 days** after each liquefaction train is placed into service. If the noise attributable to operation of the equipment at the Terminal exceeds an L_{dn} of 55 dBA at NSAs, **within 60 days** Commonwealth shall modify operation of the liquefaction facilities or install additional noise controls until a noise level below an L_{dn} of 55 dBA at the NSAs is achieved. Commonwealth shall confirm compliance with the above requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.
20. Commonwealth shall file a noise survey with the Secretary **no later than 60 days** after placing the entire Terminal into service. If a full load condition noise survey is not possible, Commonwealth shall provide an interim survey at the maximum possible horsepower load **within 60 days** of placing the Terminal into service and provide the full load survey **within 6 months**. If the noise attributable to operation of the equipment at the Terminal exceeds an L_{dn} of 55 dBA at any nearby NSA under interim or full horsepower load conditions, Commonwealth shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within 1 year** of the in-service date. Commonwealth shall confirm compliance with the above requirement by filing an additional noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.
21. **Prior to initial site preparation**, Commonwealth shall file with the Secretary the following information, stamped and sealed by the professional engineer-of-record, registered in the State of Louisiana:
 - a. finalized ground improvement solution of wick drains combined with surcharge for the Project site;
 - b. site soil compaction via surcharge procedures and specifications; and
 - c. finalized wick drains installation design package.
22. **Prior to initial site preparation**, Commonwealth shall file with the Secretary the following information, stamped and sealed by the professional engineer-of-record, registered in the State of Louisiana:
 - a. the corrosion control and prevention plan for any underground piping, structures, foundations, equipment, and components; and
 - b. the erosion control and prevention plan for the marine facility area.
23. **Prior to initial site preparation**, Commonwealth shall file with the Secretary the finalized plot plan with final design of finished slopes and elevations contour lines for the Project site. The finalized plot plan shall be stamped and sealed by the professional engineer-of-record, registered in the State of Louisiana.

24. **Prior to initial site preparation**, Commonwealth shall file with the Secretary the finalized pile load test program (e.g., pile load test procedure, locations, configuration, quality assurance, and quality control, etc.). The filing shall be stamped and sealed by the professional engineer-of-record, registered in the State of Louisiana.
25. **Prior to site initial preparation**, Commonwealth shall file with the Secretary the final design of floodwalls (storm surge protection barriers) to comply with applicable code/standards requirements including but are not limited to National Fire Protection Association (NFPA) 59A (2019 edition) as incorporated by 33 Code of Federal Regulations (CFR) 127, and NFPA 59A (2001 edition) in 49 CFR 193. In addition, the floodwalls shall be designed and maintained in accordance with American Society of Civil Engineers (ASCE)/Structural Engineering Institute (SEI) 7 (2022 edition) or equivalent and ASCE/SEI 24 (2014 edition) or equivalent and to withstand a minimum of a 500-year mean occurrence interval in consideration of relative sea level rise, local subsidence, site settlement, shoreline recession, erosion and scour effect, and wind-driven wave effects, etc. The sea level rise and vertical land movement should be in accordance with at a minimum intermediate curve corresponding to design life of facility in Global and Regional Sea Level Rise Scenarios for the United States. U.S. Department of Commerce. National Ocean and Atmospheric Administration, National Ocean Service Center for Operational Oceanographic Products and Services, February 2022 or equivalent. The final design of floodwalls shall be stamped and sealed by the professional engineer-of-record, registered in the State of Louisiana.
26. **Prior to construction of final design**, Commonwealth shall file with the Secretary consultation with U.S. Department of Transportation's (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) that determines whether the use of normally closed valves to remove stormwater from curbed areas will meet PHMSA regulations.
27. **Prior to construction of final design**, Commonwealth shall file with the Secretary the following information, stamped and sealed by the professional engineer-of-record, registered in the State of Louisiana:
 - a. the finalized settlement monitoring program and procedures for the Project site;
 - b. the total and differential settlement of final designed structures, systems, and components foundations for the Project site; and
 - c. the total and differential settlement monitoring system of LNG storage tank foundation design shall comply with applicable LNG industrial codes/standards, including but not limited to American Petroleum Institute (API) 620 (12th edition), API 625 (1st edition), API 650 (13th edition), API 653 (5th edition), and ACI 376 (2011 edition) or approved equivalents.

28. **Prior to construction of final design**, Commonwealth shall file with the Secretary the following information, stamped and sealed by the professional engineer-of-record, registered in the State of Louisiana:
- a. site preparation drawings and specifications;
 - b. finalized civil design basis, criteria, specifications;
 - c. LNG terminal structures, LNG storage tank, and foundation design drawings and calculations (including prefabricated and field constructed structures);
 - d. seismic specifications for procured Seismic Category I equipment prior to the issuing of request for quotations;
 - e. quality control procedures to be used for civil/structural design and construction; and
 - f. a determination of whether soil improvement is necessary to counteract soil liquefaction.

In addition, Commonwealth shall file, in its Implementation Plan, the schedule for producing this information.

29. **Prior to construction of the final design**, Commonwealth shall file with the Secretary the finalized seismic monitoring program for the Project site. The seismic monitoring program shall comply with NFPA 59A (2019 edition) sections 8.4.14.10, 8.4.14.12, 8.4.14.12.1, 8.4.14.12.2, and 8.4.14.13; ACI 376 (2011 edition) sections 10.7.5 and 10.8.4; U.S. Nuclear Regulatory Commission Regulatory Guide (RG) 1.12 (Revision 3) sections 1 and 3 through 9 and all subsections, or equivalents subject to review and approval. A free-field seismic monitoring device should be included in the seismic monitoring program for the Project site. The proposed seismic monitoring system must include installation location plot plan; description of the triaxial strong motion recorders or other seismic instrumentation; the proposed alarm set points and operating procedures (including emergency operating procedures) for control room operators in response to such alarms/data obtained from seismic instrumentation; and testing and maintenance procedures.
30. **Prior to construction of final design**, Commonwealth shall file with the Secretary the settlement monitoring and maintenance plan that have been reviewed, approved, stamped and sealed by a professional engineer of record registered in the state of Louisiana, which ensures the facilities are protected for the life of the LNG terminal considering settlement, subsidence, and sea level rise.
31. **Prior to construction of final design**, Commonwealth shall file with the Secretary the final design elevation for the structures/buildings outside floodwalls area,

including but are not limited to admin office/main control room, maintenance building, elevated flare, marine flare, jetty platform control room, etc. The final design elevation drawings and calculations shall be stamped and sealed by the professional engineer-of-record, registered in the State of Louisiana.

Information pertaining to the following specific recommendations shall be filed with the Secretary for review and written approval by the Director of OEP, or the Director's designee, within the timeframe indicated by each recommendation. Specific engineering, vulnerability, or detailed design information meeting the criteria specified in Order No. 833 (Docket No. RM16-15-000), including security information, shall be submitted as critical energy infrastructure information pursuant to 18 CFR § 388.113. See Critical Electric Infrastructure Security and Amending Critical Energy Infrastructure Information, Order No. 833, 81 Fed. Reg. 93,732 (December 21, 2016), FERC Stats. & Regs. 31,389 (2016). Information pertaining to items such as offsite emergency response, procedures for public notification and evacuation, and construction and operating reporting requirements would be subject to public disclosure. All information shall be filed a minimum of 30 days before approval to proceed is requested.

32. **Prior to initial site preparation**, Commonwealth shall file an overall Project schedule, which includes the proposed stages of initial site preparation, construction, commissioning, and in-service plan relative to notice to proceed requests and related conditions.
33. **Prior to initial site preparation**, Commonwealth shall file procedures for controlling access during construction.
34. **Prior to initial site preparation**, Commonwealth shall file quality assurance and quality control procedures for construction activities, including transportation load monitoring for prefabricated process modules and LNG storage tanks.
35. **Prior to initial site preparation**, Commonwealth shall file with the Secretary the finalized wind design basis for the project facility, which shall include the tornado loads determination and consideration of its load combination as required by ASCE/SEI 7 (2022 edition) or approved equivalent.
36. **Prior to initial site preparation**, Commonwealth shall file its design wind speed criteria for all other facilities not covered by PHMSA's Letter of Determination to be designed to withstand wind speeds commensurate with the risk and reliability associated with the facilities in accordance with ASCE 7-22 or equivalent.
37. **Prior to initial site preparation**, Commonwealth shall develop an Emergency Response Plan (ERP) (including evacuation and any sheltering and re-entry) and coordinate procedures with the U.S. Coast Guard (USCG); state, county, and local emergency planning groups; fire departments; state and local law enforcement; and other appropriate federal agencies. This plan shall be consistent with

recommended and good engineering practices and based on potential impacts and onsets of hazards from accidental and intentional events along the LNG marine vessel route and potential impacts and onset of hazards from accidental and intentional events at the LNG terminal, including but not limited to a catastrophic failure of the largest LNG tank. This plan shall address any special considerations and pre-incident planning for infrastructure and public with access and functional needs and shall include at a minimum:

- a. materials and plans for periodic dissemination of public education and training materials for evacuation and/or shelter in place of the public within any transient hazard areas along the marine vessel route, and within LNG terminal hazard areas;
- b. plans to competently train emergency responders required to effectively and safely respond to hazardous material incidents including, but not limited to LNG fires and dispersion;
- c. plans to competently train emergency responders to effectively and safely evacuate or shelter public within transient hazard areas along the marine vessel route, and within hazard areas from LNG terminal;
- d. designated contacts with federal, state and local emergency response agencies responsible for emergency management and response within any transient hazard areas along the marine vessel route, and within hazard areas from LNG terminal;
- e. scalable procedures for the prompt notification of appropriate local officials and emergency response agencies based on the level and severity of potential incidents;
- f. scalable procedures for mobilizing response and establishing a unified command, including identification, location, and design of any emergency operations centers and emergency response equipment required to effectively and safely to respond to hazardous material incidents and evacuate or shelter public within transient hazard areas along the marine vessel route, and within LNG terminal hazard areas;
- g. scalable procedures for notifying public, including identification, location, design, and use of any permanent sirens or other warning devices required to effectively communicate and warn the public prior to onset of debilitating hazards within any transient hazard areas along the LNG marine vessel route and within hazard areas from LNG terminal;
- h. scalable procedures for evacuating the public, including identification, location, design, and use of evacuation routes/methods and any mustering

locations required effectively and safely evacuate public within any transient hazard areas along the LNG marine transit route and within hazard areas from LNG terminal; and

- i. scalable procedures for sheltering the public, including identification, location, design, and use of any shelters demonstrated to be needed and demonstrated to effectively and safely shelter public prior to onset of debilitating hazards within transient hazard areas that may better benefit from sheltering in place (i.e., those within Zones of Concern 1 and 2), along the route of the LNG marine vessel and within hazard areas that may benefit from sheltering in place (i.e., those within areas of 1,600 British thermal units (BTU)/ft²-hr and 10,000 BTU/ft²-hr radiant heats from fires with farthest impacts, including from a catastrophic failure of largest LNG tank) of the LNG terminal.

Commonwealth shall notify the FERC staff of all planning meetings in advance and shall report progress on the development of its ERP **at 3-month intervals**.

38. **Prior to initial site preparation**, Commonwealth shall file a Cost-Sharing Plan identifying the mechanisms for funding all Project-specific security/emergency management costs that would be imposed on state and local agencies. This comprehensive plan shall include funding mechanisms for the capital costs associated with any necessary security/emergency management equipment and personnel base. This plan shall include sustained funding of any requirement or resource gap analysis identified to effectively and safely evacuate and shelter public and to effectively and safely respond to hazardous material incidents consistent with recommended and good engineering practices. Commonwealth shall notify FERC staff of all planning meetings in advance and shall report progress on the development of its Cost Sharing Plan **at 3-month intervals**.
39. **Prior to construction of final design of any permanent facilities**, Commonwealth shall file Emergency Response Plans and any associated Cost Sharing Plan provisions in coordination with federal, state, and local agencies for hazards that may reach State Highway 27, including identifying potential incidents, impact distances, and timing of the onset of hazards reaching State Highway 27, and measures to notify approaching highway traffic and evacuate persons from impacted areas as quickly as possible relative to the onset of hazards. The ERP and Cost Sharing Plans should discuss consideration of signage or equivalent, and maintenance thereof, to facilitate notification and evacuation.
40. **Prior to construction of final design**, Commonwealth shall file change logs that list and explain any changes made from the front-end-engineering-design (FEED) provided in Commonwealth's application and filings. A list of all changes with an

explanation for the design alteration shall be provided and all changes shall be clearly indicated on all diagrams and drawings.

41. **Prior to construction of final design**, Commonwealth shall file information/revisions pertaining to Commonwealth's response: numbers 15, 45, 65, and 106 of its February 4, 2020 filing; numbers 124, 125c, 127, 134, 135, 148, 153, 154, 155, 157, 161, 162, 164, 165, and 167 of its March 4, 2020 filing; numbers 7, 17, and 18 of its June 4, 2021 filing; numbers 5, 23, 27, 28, 29, 30, 31, 32, and 33 of its November 9, 2021 filing, which indicated features to be included or considered in the final design.
42. **Prior to construction of final design**, Commonwealth shall file drawings and specifications for crash rated vehicle barriers in accordance with American Society for Testing and Materials (ASTM) F2656 (2015 edition) or approved equivalent at each facility entrance for access control. The crash rating vehicle type shall be supported by a security vulnerability assessment that takes into account the potential target attractiveness, threats, vulnerabilities, consequences, and mitigation effectiveness consistent with American Institute of Chemical Engineers, Guidelines for Analyzing and Managing the Security Vulnerabilities of Fixed Chemical Sites, 2003 or approved equivalent. The crash rating speed shall be supported by an analysis of the maximum attainable vehicle velocity based on vehicle type acceleration and road characteristics (e.g., straight length, radius of curvature, sloped/banked, coefficient of friction, etc.).
43. **Prior to construction of final design**, Commonwealth shall file drawings of internal road vehicle protections, such as guard rails, barriers, and bollards to protect transfer piping, pumps, compressors, hydrants, monitors, etc. to ensure that they are located away from roadway or protected from inadvertent damage from vehicles.
44. **Prior to construction of final design**, Commonwealth shall file drawings of the security fence. The fencing drawings shall provide details of fencing that demonstrates it is in accordance with NFPA 59A (2019 edition) or approved equivalent and would restrict and deter access around the entire facility and has a setback from exterior features (e.g., power lines, trees, etc.) and from interior features (e.g., piping, equipment, buildings, etc.) that does not allow the fence to be overcome.
45. **Prior to construction of final design**, Commonwealth shall file security camera and intrusion detection drawings. The security camera drawings shall show the locations, mounting elevation, areas covered, and features of each camera (e.g., fixed, tilt/pan/zoom, motion detection alerts, low light, etc.) and shall provide camera coverage at access points and along the entire perimeter with redundancies and camera coverage interior of the facility to enable rapid monitoring of the terminal, including a camera at the top of each LNG storage tank, and coverage within pretreatment areas, within liquefaction areas, within truck transfer areas,

within marine transfer areas, and within buildings. The drawings shall show or note the location and type of the intrusion detection and shall cover the entire perimeter of the facility.

46. **Prior to construction of final design**, Commonwealth shall file photometric analyses or equivalent and associated lighting drawings. The lighting drawings shall show the location, elevation, type of light fixture, and lux levels of the lighting system and shall provide illumination along the perimeter of the terminal, process equipment, mooring points, and along paths/roads of access and egress to facilitate security monitoring and emergency response operations in accordance with API 540 (4th edition) or approved equivalent and applicable federal regulations.
47. **Prior to construction of final design**, Commonwealth shall file a plot plan of the final design showing all major equipment, structures, buildings, and impoundment systems.
48. **Prior to construction of final design**, Commonwealth shall file a building siting assessment to ensure plant buildings that are occupied or critical to the safety of the LNG plant are adequately protected from potential hazards involving fires and vapor cloud explosions.
49. **Prior to construction of final design**, Commonwealth shall file three-dimensional plant drawings to confirm plant layout for maintenance, access, egress, and congestion.
50. **Prior to construction of final design**, Commonwealth shall file up-to-date process flow diagrams (PFDs), heat and mass balances (HMBs), and piping and instrument diagrams (P&IDs) including vendor P&IDs. The HMBs shall demonstrate a peak export rate of 9.5 million metric tonnes per annum. The P&IDs shall include the following information:
 - a. equipment tag number, name, size, duty, capacity, and design conditions;
 - b. equipment insulation type and thickness;
 - c. storage tank pipe penetration size and nozzle schedule;
 - d. valve high pressure side and internal and external vent locations;
 - e. piping with line number, piping class specification, size, and insulation type and thickness;
 - f. piping specification breaks and insulation limits;
 - g. all control and manual valves numbered;
 - h. relief valves with size and set points; and
 - i. drawing revision number and date.

51. **Prior to construction of final design**, Commonwealth shall file P&IDs, specifications, and procedures that clearly show and specify the tie-in details required to safely connect subsequently constructed facilities with the operational facilities.
52. **Prior to construction of final design**, Commonwealth shall file a car seal and lock philosophy and car seal and lock program, including a list of all car-sealed and locked valves consistent with the P&IDs. The car seal and lock program should include monitoring and periodically reviewing correct car seal and lock placement and valve position.
53. **Prior to construction of final design**, Commonwealth shall file information to demonstrate the Engineering Procurement and Construction (EPC) contractor has verified that all FEED hazard identification recommendations have been addressed.
54. **Prior to construction of final design**, Commonwealth shall file a hazard and operability review of the final design P&IDs, a list of the resulting recommendations, and action taken on the recommendations. The issued for construction P&IDs shall incorporate the hazard and operability review recommendations and justification shall be provided for any recommendations that are not implemented.
55. **Prior to construction of final design**, Commonwealth shall file design pressure and set point information for the piping, equipment, and pressure relief valves located between the inlet feed gas high integrity pressure protection system (HIPPS) and the downstream pressure regulators to demonstrate pressures would not exceed the design pressures of these components.
56. **Prior to construction of final design**, Commonwealth shall provide a check valve upstream of the acid gas removal column to prevent backflow or provide a dynamic simulation that shows that upon plant shutdown, the swan neck would be sufficient for this purpose.
57. **Prior to construction of final design**, Commonwealth shall specify a second source of vacuum breaker gas (i.e., pad gas) for the LNG storage tanks independent of the liquefaction facility.
58. **Prior to construction of final design**, Commonwealth shall include LNG tank fill flow measurement with high flow alarm.
59. **Prior to construction of final design**, Commonwealth shall specify a discretionary vent valve on each LNG storage tank that is operable through the Distributed Control System (DCS). In addition, a car sealed open manual block valve shall be provided upstream of the discretionary vent valve.
60. **Prior to construction of final design**, Commonwealth shall file the safe operating limits (upper and lower), alarm and shutdown set points for all instrumentation (e.g., temperature, pressures, flows, and compositions).

61. **Prior to construction of final design**, Commonwealth shall file cause-and-effect matrices for the process instrumentation, fire and gas detection system, and emergency shutdown system. The cause-and-effect matrices shall include alarms and shutdown functions, details of the voting and shutdown logic, and set points.
62. **Prior to construction of final design**, Commonwealth shall specify that all emergency shutdown valves are to be equipped with open and closed position switches connected to the Distributed Control System (DCS)/ safety instrument system (SIS).
63. **Prior to construction of final design**, Commonwealth shall demonstrate that all electrical, instrument, and control systems at the project, which activate emergency systems or are relied upon for isolation or shutdowns, will be designed to withstand a 20-minute fire exposure per UL 1709 (6th edition) or approved equivalent.
64. **Prior to construction of final design**, Commonwealth shall file an up-to-date equipment list, process and mechanical data sheets, and specifications. The specifications shall include:
 - a. building specifications (e.g., control buildings, electrical buildings, compressor buildings, storage buildings, pressurized buildings, ventilated buildings, blast resistant buildings);
 - b. mechanical specifications (e.g., piping, valve, insulation, rotating equipment, heat exchanger, storage tank and vessel, other specialized equipment);
 - c. electrical and instrumentation specifications (e.g., power system, control system, SIS, cable, other electrical and instrumentation); and
 - d. security and fire safety specifications (e.g., security, passive protection, hazard detection, hazard control, firewater).
65. **Prior to construction of final design**, Commonwealth shall file a list of all codes and standards and the final specification document number where they are referenced.
66. **Prior to construction of final design**, Commonwealth shall file a complete specifications and drawings of the proposed LNG tank design and installation.
67. **Prior to construction of final design**, Commonwealth shall file an evaluation of emergency shutdown valve closure times. The evaluation shall account for the time to detect an upset or hazardous condition, notify plant personnel, and close the emergency shutdown valve(s).
68. **Prior to construction of final design**, Commonwealth shall file an evaluation of dynamic pressure surge effects from valve opening and closure times and pump operations that demonstrate that the surge effects do not exceed the design pressures.

69. **Prior to construction of final design**, Commonwealth shall demonstrate that, for hazardous fluids, piping and piping nipples 2 inches or less in diameter are designed to withstand external loads, including vibrational loads in the vicinity of rotating equipment and operator live loads in areas accessible by operators.
70. **Prior to construction of final design**, Commonwealth shall clearly specify the responsibilities of the LNG tank contractor and the EPC contractor for the piping associated with the LNG storage tank.
71. **Prior to construction of final design**, Commonwealth shall file the sizing basis and capacity for the final design of the flares and/or vent stacks as well as the pressure and vacuum relief valves for major process equipment, vessels, and storage tanks.
72. **Prior to construction of final design**, Commonwealth shall file the sizing calculations for the PSVs of the following vessels: E-A0101 Inlet Gas Preheater, E-A0403 Demethanizer Reboiler, E-A0301 Regeneration gas hot oil heater. Specifically, the calculations shall show the influence of the backpressure on these PSVs since they vent to the hot oil expansion drum (V-2101A) instead of the flare.
73. **Prior to construction of final design**, Commonwealth shall specify the process vessels, and storage vessels for ethylene, propane, isopentane, condensate, hot oil, and LNG are installed with spare pressure relief valves to ensure overpressure protection during relief valve testing or maintenance.
74. **Prior to construction of final design**, Commonwealth shall file an updated fire protection evaluation of the proposed facilities. A copy of the evaluation, a list of recommendations and supporting justifications, and actions taken on the recommendations shall be filed. The evaluation shall justify the type, quantity, and location of hazard detection and hazard control, passive fire protection, emergency shutdown and depressurizing systems, firewater, and emergency response equipment, training, and qualifications in accordance with NFPA 59A (2001). The justification for the flammable and combustible gas detection and flame and heat detection systems shall be in accordance with International Society of Automation (ISA) 84.00.07 (2018 edition) or approved equivalent methodologies and would need to demonstrate 90 % or more of releases (unignited and ignited) that could result in an off-site or cascading impact would be detected by two or more detectors and result in isolation and de inventory within 10 minutes. The analysis shall take into account the set points, voting logic, wind speeds, and wind directions. The justification for firewater shall provide calculations for all firewater demands based on design densities, surface area, and throw distance as well as specifications for the corresponding hydrant and monitors needed to reach and cool equipment.
75. **Prior to construction of final design**, Commonwealth shall file spill containment system drawings with dimensions and slopes of curbing, trenches, impoundments,

tertiary containment and capacity calculations considering any foundations and equipment within impoundments, as well as the sizing and design of the down-comers. The spill containment drawings shall show containment for all hazardous fluids including all liquids handled above their flashpoint, from the largest flow from a single line for 10 minutes, including de-inventory, or the maximum liquid from the largest vessel (or total of impounded vessels) or otherwise demonstrate that providing spill containment would not significantly reduce the flammable vapor dispersion or radiant heat consequences of a spill.

76. **Prior to construction of final design**, Commonwealth shall file an analysis that demonstrates the flammable vapor dispersion from design spills would be prevented from dispersing underneath the elevated LNG storage tanks, or the LNG storage tanks would be able to withstand an overpressure due to ignition of the flammable vapor that disperses underneath the elevated LNG storage tanks.
77. **Prior to construction of final design**, Commonwealth shall file an analysis that demonstrates the flammable vapor dispersion from design spills would be prevented from dispersing underneath the elevated control room, or the control room would be able to withstand an overpressure due to ignition of the flammable vapor that disperses underneath the elevated control room.
78. **Prior to construction of final design**, Commonwealth shall file a technical review of its proposed facility design that evaluates other potential locations for the proposed control room, or additional mitigation measures to protection the control room from high radiant heats.
79. **Prior to construction of final design**, Commonwealth shall file electrical area classification drawings, including cross sectional drawings. The drawings shall demonstrate compliance with NFPA 59A (2019 edition), NFPA 70 (2017 edition), NFPA 497 (2017 edition), and API RP 500 (3rd edition), or approved equivalents. In addition, the drawings shall include revisions to the electrical area classification design or provide technical justification that supports the electrical area classification of the following areas using most applicable API RP 500 figures (e.g., figures 20 and 21) or hazard modeling of various release rates from equivalent hole sizes and wind speeds (see NFPA 497 release rate of 1 lb-mole/minute).
80. **Prior to construction of final design**, Commonwealth shall file analysis of the buildings containing hazardous fluids and the ventilation calculations that limit concentrations below the lower flammable limits (LFL) (e.g., 25-percent LFL), including an analysis of off gassing of hydrogen in battery rooms, and shall also provide hydrogen detectors that alarm (e.g., 20- to 25-percent LFL) and initiate mitigative actions (e.g., 40- to 50-percent LFL) in accordance with NFPA 59A (2019 edition) and NFPA 70 (2017 edition), or approved equivalents.

81. **Prior to construction of final design**, Commonwealth shall file drawings and details of how process seals or isolations installed at the interface between a flammable fluid system and an electrical conduit or wiring system meet the requirements of NFPA 59A (2001) or approved equivalent.
82. **Prior to construction of final design**, Commonwealth shall file details of an air gap or vent installed downstream of process seals or isolations installed at the interface between a flammable fluid system and an electrical conduit or wiring system. Each air gap shall vent to a safe location and be equipped with a leak detection device that shall continuously monitor for the presence of a flammable fluid, alarm the hazardous condition, and shut down the appropriate systems.
83. **Prior to construction of final design**, Commonwealth shall file complete drawings and a list of the hazard detection equipment. The drawings shall clearly show the location and elevation of all detection equipment as well as their coverage area. The list shall include the instrument tag number, type and location, alarm indication locations, and shutdown functions of the hazard detection equipment.
84. **Prior to construction of final design**, Commonwealth shall file a technical review of facility design that:
 - a. identifies all combustion/ventilation air intake equipment and the distances to any possible flammable gas or toxic release; and
 - b. demonstrates that these areas are adequately covered by hazard detection devices and indicates how these devices would isolate or shutdown any combustion or heating ventilation and air conditioning equipment whose continued operation could add to or sustain an emergency.
85. **Prior to construction of final design**, Commonwealth shall file a design that includes hazard detection suitable to detect high temperatures and smoldering combustion products in electrical buildings and control room buildings.
86. **Prior to construction of final design**, Commonwealth shall file an evaluation of the voting logic and voting degradation for hazard detectors.
87. **Prior to construction of final design**, Commonwealth shall file a list of alarm and shutdown set points for all hazard detectors that account for the calibration gas of the hazard detectors when determining the lower flammable limit set points for methane, ethylene, propane, isopentane, and condensate.
88. **Prior to construction of final design**, Commonwealth shall file a list of alarm and shutdown set points for all hazard detectors that account for the calibration gas of hazard detectors when determining the set points for toxic components such as condensate and hydrogen sulfide.
89. **Prior to construction of final design**, Commonwealth shall file a drawing showing the location of the emergency shutdown buttons, including, but not limited to the refrigerant storage, condensate storage, and LNG storage areas. Emergency

shutdown buttons shall be easily accessible, conspicuously labeled, and located in an area which would be accessible during an emergency.

90. **Prior to construction of final design**, Commonwealth shall file facility plan drawings and a list of the fixed and wheeled dry-chemical, hand-held fire extinguishers, and other hazard control equipment. Plan drawings shall clearly show the location by tag number of all fixed, wheeled, and hand-held extinguishers and shall demonstrate the spacing of extinguishers meet prescribed NFPA 10 (2018 edition) or approved equivalent travel distances. The list shall include the equipment tag number, type, capacity, equipment covered, discharge rate, and automatic and manual remote signals initiating discharge of the units and shall demonstrate they meet NFPA 59A (2019 edition) or approved equivalent.
91. **Prior to construction of final design**, Commonwealth shall file drawings and specifications for the structural passive protection systems to protect equipment and supports from cryogenic releases.
92. **Prior to construction of final design**, Commonwealth shall file calculations or test results for the structural passive protection systems to protect equipment and supports from cryogenic releases.
93. **Prior to construction of final design**, Commonwealth shall file drawings and specifications for the structural passive protection systems to protect equipment and supports from pool and jet fires.
94. **Prior to construction of final design**, Commonwealth shall file a detailed quantitative analysis to demonstrate that adequate mitigation would be provided for each pressure vessel that could fail within the 4,000 BTU/ft²-hr zone from a pool or jet fires; each critical structural component (including the LNG marine vessel) and emergency equipment item that could fail within the 4,900 BTU/ft²-hr zone from a pool or jet fire; and each occupied building that could expose unprotected personnel within the 1,600 BTU/ft²-hr zone from a pool or jet fire. Trucks at truck transfer stations shall be included in the analysis of potential pressure vessel failures, as well as measures needed to prevent cascading impact due to the 10-minute sizing spill at the marine area. A combination of passive and active protection for pool fires and passive and/or active protection for jet fires shall be provided and demonstrate the effectiveness and reliability. Effectiveness of passive mitigation shall be supported by calculations or test results for the thickness limiting temperature rise over the fire duration, and active mitigation shall be supported by reliability information by calculations or test results, such as demonstrating flow rates and durations of any cooling water would mitigate the heat absorbed by the component. The total firewater demand shall account for all components that could fail to a pool or jet fire.
95. **Prior to construction of final design**, Commonwealth shall file an evaluation and associated specifications, drawings, and datasheets for transformers demonstrating

how it would prevent cascading damage of transformers (e.g., fire walls or spacing) in accordance with NFPA 850 (2015 edition) or approved equivalent.

96. **Prior to construction of final design**, Commonwealth shall file facility plan drawings showing the proposed location of the firewater and any foam systems. Plan drawings shall clearly show the location of firewater and foam piping, post indicator and sectional valves, and the location and area covered by, each monitor, hydrant, hose, water curtain, deluge system, foam system, water-mist system, and sprinkler. The drawings shall demonstrate that each process area, fire zone, or other sections of piping with several users can be isolated with post indicator or sectional valves and that firewater coverage is provided by at least two monitors or hydrants with sufficient firewater flow to cool exposed surfaces subjected to a fire. The drawings shall also include piping and instrumentation diagrams of the firewater and foam systems.
97. **Prior to construction of final design**, Commonwealth shall specify that the firewater pump shelter is designed to remove the largest firewater pump or other component for maintenance with an overhead or external crane.
98. **Prior to construction of final design**, Commonwealth shall demonstrate that the firewater storage tank is in compliance with NFPA 22 (2018 edition) or approved equivalent.
99. **Prior to construction of final design**, Commonwealth shall specify that the firewater flow test meter is equipped with a transmitter and that a pressure transmitter is installed upstream of the flow transmitter. The flow transmitter and pressure transmitter shall be connected to the DCS and recorded.
100. **Prior to construction of final design**, Commonwealth shall file drawings of the storage tank piping support structure and support of horizontal piping at grade including pump columns, relief valves, pipe penetrations, instrumentation, and appurtenances.
101. **Prior to construction of final design**, Commonwealth shall file the structural analysis of the LNG storage tank and outer containment demonstrating they are designed to withstand all loads and combinations, including shipping loads.
102. **Prior to construction of the final design**, Commonwealth shall file the finalized projectile/missile impact analysis to demonstrate that the outer concrete container wall of the full containment LNG storage tank could withstand projectile/missile impact. The analysis shall detail the projectile/missile speeds and characteristics and methods used to determine penetration resistance and perforation depths. The finalized projectile/missile impact analysis shall be stamped and sealed by the professional engineer-of-record, registered in the State of Louisiana.
103. **Prior to construction of final design**, Commonwealth shall file an analysis of the structural integrity of the outer containment of the full containment LNG storage

tank demonstrating it can withstand the radiant heat from a roof tank top fire or adjacent tank roof fire.

104. **Prior to construction of final design**, Commonwealth shall file an analysis of the structural integrity of the outer containment of the full containment LNG storage tank demonstrating it can withstand the thermal shock caused by a failure of the inner tank.
105. **Prior to commissioning**, Commonwealth shall file a detailed schedule for commissioning through equipment startup. The schedule shall include milestones for all procedures and tests to be completed: prior to introduction of hazardous fluids and during commissioning and startup. Commonwealth shall file documentation certifying that each of these milestones has been completed before authorization to commence the next phase of commissioning and startup will be issued.
106. **Prior to commissioning**, Commonwealth shall file detailed plans and procedures for: testing the integrity of onsite mechanical installation; functional tests; introduction of hazardous fluids; operational tests; and placing the equipment into service.
107. **Prior to commissioning**, Commonwealth shall file settlement results from the hydrostatic tests of the LNG storage containers and shall file a plan to periodically verify settlement is as expected and does not exceed the applicable criteria set forth in API 620 (12th edition), API 625 (1st edition), API 650 (13th edition), API 653 (5th edition), and ACI 376 (2011 edition) or approved equivalents. The program shall also specify what actions would be taken after various levels of seismic events.
108. **Prior to commissioning**, Commonwealth shall file the operation and maintenance procedures and manuals, as well as safety procedures, hot work procedures and permits, abnormal operating conditions reporting procedures, simultaneous operations procedures, and management of change procedures and forms.
109. **Prior to commissioning**, Commonwealth shall file a plan for clean-out, dry-out, purging, and tightness testing. This plan shall address the requirements of the American Gas Association's Purging Principles and Practice and shall provide justification if not using an inert or non-flammable gas for clean-out, dry-out, purging, and tightness testing.
110. **Prior to commissioning**, Commonwealth shall tag all equipment, instrumentation, and valves in the field, including drain valves, vent valves, main valves, and car-sealed or locked valves.
111. **Prior to commissioning**, Commonwealth shall file a plan to maintain a detailed training log to demonstrate that operating, maintenance, and emergency response staff have completed the required training.

112. **Prior to commissioning**, Commonwealth shall file the procedures for pressure/leak tests which address the requirements of American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section VIII (2017 edition) and ASME B31.3 (2016 edition) or approved equivalents. In addition, Commonwealth shall file a line list of pneumatic and hydrostatic test pressures.
113. **Prior to introduction of hazardous fluids**, Commonwealth shall complete and document a pre-startup safety review to ensure that installed equipment meets the design and operating intent of the facility. The pre-startup safety review shall include any changes since the last hazard review, operating procedures, and operator training. A copy of the review with a list of recommendations, and actions taken on each recommendation, shall be filed.
114. **Prior to introduction of hazardous fluids**, Commonwealth shall complete and document all pertinent tests (Factory Acceptance Tests, Site Acceptance Tests, Site Integration Tests) associated with the DCS and SIS that demonstrates full functionality and operability of the system.
115. **Prior to introduction of hazardous fluids**, Commonwealth shall develop, file, and implement an alarm management program consistent with ISA 18.2 (2016 edition) or approved equivalent to reduce alarm complacency and maximize the effectiveness of operator response to alarms.
116. **Prior to introduction of hazardous fluids**, Commonwealth shall complete and document a clean agent acceptance tests.
117. **Prior to introduction of hazardous fluids**, Commonwealth shall complete and document a firewater pump acceptance test and firewater monitor and hydrant coverage test. The actual coverage area from each monitor and hydrant shall be shown on facility plot plan(s).
118. **Prior to introduction of hazardous fluids**, Commonwealth shall complete and document foam system and sprinkler system acceptance tests.
119. Commonwealth shall file a request for written authorization from the Director of OEP **prior to unloading or loading the first LNG commissioning cargo**. After **production of first LNG**, Commonwealth shall file weekly reports on the commissioning of the proposed systems that detail the progress toward demonstrating the facilities can safely and reliably operate at or near the design production rate. The reports shall include a summary of activities, problems encountered, and remedial actions taken. The weekly reports shall also include the latest commissioning schedule, including projected and actual LNG production by each liquefaction train, LNG storage inventories in each storage tank, and the number of anticipated and actual LNG commissioning cargoes, along with the associated volumes loaded or unloaded. Further, the weekly reports shall include a status and list of all planned and completed safety and reliability tests, work

authorizations, and punch list items. Problems of significant magnitude shall be reported to the FERC within 24 hours.

120. **Prior to commencement of service**, Commonwealth shall file a request for written authorization from the Director of OEP. Such authorization would only be granted following a determination by the USCG, under its authorities under the Ports and Waterways Safety Act, the Magnuson Act, the Maritime Transportation Security Act of 2002, and the Security and Accountability For Every Port Act, that appropriate measures to ensure the safety and security of the facility and the waterway have been put into place by Commonwealth or other appropriate parties.
121. **Prior to commencement of service**, Commonwealth shall file any proposed revisions to the security plan and physical security of the plant.
122. **Prior to commencement of service**, Commonwealth shall label piping with fluid service and direction of flow in the field consistent with ASME A13.1 (2007 edition) or approved equivalent, in addition to the pipe labeling requirements of NFPA 59A (2001).
123. **Prior to commencement of service**, Commonwealth shall provide plans for any preventative and predictive maintenance program that performs periodic or continuous equipment condition monitoring.
124. **Prior to commencement of service**, Commonwealth shall develop procedures for offsite contractors' responsibilities, restrictions, monitoring, training, and limitations and for supervision of these contractors and their tasks by Commonwealth staff. Specifically, the procedures shall address:
 - a. selecting a contractor, including obtaining and evaluating information regarding the contract employer's safety performance and programs;
 - b. informing contractors of the known potential hazards, including flammable and toxic release, explosion, and fire, related to the contractor's work and systems they are working on;
 - c. developing and implementing provisions to control and monitor the entrance, presence, and exit of contract employers and contract employees from process areas, buildings, and the plant;
 - d. developing and implementing safe work practices for control of personnel safety hazards, including lockout/tagout, confined space entry, work permits, hot work, and opening process equipment or piping;
 - e. developing and implementing safe work practices for control of process safety hazards, including identification of layers of protection in systems being worked on, recognizing abnormal conditions on systems they are working on, and re-instatement of layers of protection, including ensuring bypass, isolation valve, and car-seal programs and procedures are being followed;

- f. developing and implementing provisions to ensure contractors are trained on the emergency action plans and that they are accounted for in the event of an emergency; and
- g. monitoring and periodically evaluating the performance of contract employers in fulfilling their obligations above, including successful and safe completion of work and re-instatement of all layers of protection.

In addition, conditions 124 through 127 shall apply **throughout the life** of the LNG Terminal facilities:

125. The facility shall be subject to regular FERC staff technical reviews and site inspections on at least an **annual basis** or more frequently as circumstances indicate. Prior to each FERC staff technical review and site inspection, Commonwealth shall respond to a specific data request including information relating to possible design and operating conditions that may have been imposed by other agencies or organizations. Up-to-date detailed P&IDs reflecting facility modifications and provision of other pertinent information not included in the semi-annual reports described below, including facility events that have taken place since the previously submitted semi-annual report, shall be submitted.
126. **Semi-annual** operational reports shall be filed with the Secretary to identify changes in facility design and operating conditions; abnormal operating experiences; activities (e.g., ship arrivals, quantity and composition of imported and exported LNG, liquefied and vaporized quantities, boil off/flash gas); and plant modifications, including future plans and progress thereof. Abnormalities shall include, but not be limited to, unloading/loading/shipping problems, potential hazardous conditions from offsite vessels, storage tank stratification or rollover, geysering, storage tank pressure excursions, cold spots on the storage tank, storage tank vibrations and/or vibrations in associated cryogenic piping, storage tank settlement, significant equipment or instrumentation malfunctions or failures, non-scheduled maintenance or repair (and reasons therefore), relative movement of storage tank inner vessels, hazardous fluids releases, fires involving hazardous fluids and/or from other sources, negative pressure (vacuum) within a storage tank, and higher than predicted boil off rates. Adverse weather conditions and the effect on the facility also shall be reported. Reports shall be submitted **within 45 days after each period ending June 30 and December 31**. In addition to the above items, a section entitled "Significant Plant Modifications Proposed for the Next 12 Months (dates)" shall be included in the semi-annual operational reports. Such information would provide the FERC staff with early notice of anticipated future construction/maintenance at the LNG facilities.
127. In the event the temperature of any region of the LNG storage container, including any secondary containment and imbedded pipe supports, becomes less than the

minimum specified operating temperature for the material, the Commission shall be notified **within 24 hours** and procedures for corrective action shall be specified.

128. Significant non-scheduled events, including safety-related incidents (e.g., LNG, condensate, refrigerant, or natural gas releases; fires; explosions; mechanical failures; unusual over pressurization; and major injuries) and security-related incidents (e.g., attempts to enter site, suspicious activities) shall be reported to the FERC staff. In the event that an abnormality is of significant magnitude to threaten public or employee safety, cause significant property damage, or interrupt service, notification shall be made immediately, without unduly interfering with any necessary or appropriate emergency repair, alarm, or other emergency procedure. In all instances, notification shall be made to the FERC staff **within 24 hours**. This notification practice shall be incorporated into the liquefaction facility's emergency plan. Examples of reportable hazardous fluids-related incidents include:
- a. fire;
 - b. explosion;
 - c. estimated property damage of \$50,000 or more;
 - d. death or personal injury necessitating in-patient hospitalization;
 - e. release of hazardous fluids for 5 minutes or more;
 - f. unintended movement or abnormal loading by environmental causes, such as an earthquake, landslide, or flood, that impairs the serviceability, structural integrity, or reliability of an LNG facility that contains, controls, or processes hazardous fluids;
 - g. any crack or other material defect that impairs the structural integrity or reliability of an LNG facility that contains, controls, or processes hazardous fluids;
 - h. any malfunction or operating error that causes the pressure of a pipeline or LNG facility that contains or processes hazardous fluids to rise above its maximum allowable operating pressure (or working pressure for LNG facilities) plus the build-up allowed for operation of pressure-limiting or control devices;
 - i. a leak in an LNG facility that contains or processes hazardous fluids that constitutes an emergency;
 - j. inner tank leakage, ineffective insulation, or frost heave that impairs the structural integrity of an LNG storage tank;
 - k. any safety-related condition that could lead to an imminent hazard and cause (either directly or indirectly by remedial action of the operator), for purposes other than abandonment, a 20 percent reduction in operating pressure or

shutdown of operation of a pipeline or an LNG facility that contains or processes hazardous fluids;

- l. safety-related incidents from hazardous fluids transportation occurring at or en route to and from the LNG facility; or
- m. an event that is significant in the judgment of the operator and/or management even though it did not meet the above criteria or the guidelines set forth in an LNG facility's incident management plan.

In the event of an incident, the Director of OEP has delegated authority to take whatever steps are necessary to ensure operational reliability and to protect human life, health, property, or the environment, including authority to direct the LNG facility to cease operations. Following the initial company notification, the FERC staff would determine the need for a separate follow-up report or follow up in the upcoming semi-annual operational report. All company follow-up reports shall include investigation results and recommendations to minimize a reoccurrence of the incident.

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Commonwealth LNG, LLC

Docket Nos. CP19-502-000
CP19-502-001

(Issued November 17, 2022)

GLICK, Chairman, *concurring*:

1. I concur with the Commission’s decision to grant, pursuant to section 3 of the Natural Gas Act (NGA),¹ Commonwealth LNG, LLC’s (Commonwealth) requested authorization to construct and operate the Commonwealth LNG project.
2. I write separately, however, because I am concerned that section 3 of the NGA does not provide a sufficient framework for consideration of the adverse impacts associated with a proposed LNG facility. Under section 7 of the NGA, when the Commission determines whether to grant a certificate of public convenience and necessity for a proposed interstate gas pipeline, we essentially make two findings: whether the project is needed and, if so, whether it is in the public interest. As the courts have noted, this latter determination requires us to consider “all factors bearing on the public interest,”² which we do by weighing the project’s benefits against its potential adverse impacts. For LNG export or import facilities, however, the Department of Energy determines whether the export or import is consistent with the public interest.³ The Commission’s review is limited to considering whether the construction and operation of the import/export facilities would be consistent with the public interest, with the statutory presumption that the facilities *are* consistent with the public interest.⁴ Under that bifurcated framework, it is not clear how we are supposed to weigh a project’s

¹ 15 U.S.C. § 717b(a).

² *Atl. Refining Co. v. Pub. Serv. Comm’n of N.Y.*, 360 U.S. 378, 391 (1959).

³ 42 U.S.C. § 7151(b); *see also* 15 U.S.C. § 717b(c) (stating that exports of natural gas “to a nation with which there is in effect a free trade agreement . . . shall be deemed to be consistent with the public interest”).

⁴ *See EarthReports, Inc. v. FERC*, 828 F.3d 949, 953 (D.C. Cir. 2016) (“Under NGA § 3, an LNG proposal shall be authorized unless the proposal will not be consistent with the public interest, while under NGA § 7 a finding must be made that a proposal is or will be required by the present or future public convenience and necessity; NGA § 3, unlike § 7, sets out a general presumption favoring such authorization.”) (cleaned up).

adverse impacts when the public interest determination as to the LNG export or import is outside our jurisdiction.

3. Here, the Environmental Impact Statement (EIS), while acknowledging that the Commonwealth LNG project operation will result in CO₂ emissions in excess of 3.5 million tons per year, fails to conclude whether these emissions would have a significant impact on the environment. In my view, the Commission should have assessed whether the project's CO₂ emissions are significant. The Commission in *Northern Natural* already demonstrated it could do so.⁵ Considering the significance of a reasonably foreseeable adverse impact would also make the Commission's order more legally durable, should a protesting party challenge the Commission's decision in court.

4. Climate change poses an existential threat to our security, economy, environment, and, ultimately, the health of individual citizens. Unlike many of the challenges that our society faces, we know with certainty what causes climate change: It is the result of GHG emissions, including carbon dioxide and methane—which are released in large quantities through the production and the consumption of natural gas. Given that, it is critical that, consistent with our statutory authority, we fully consider a project's contribution to climate change as part of our public interest determination. In my opinion, it is readily apparent that the Commonwealth LNG project's operational CO₂ emissions, which are projected to exceed 3.5 million tons per year (the equivalent of the annual GHG emissions of nearly 700,000 automobiles⁶), will significantly impact the environment. As the EIS notes, these emissions will increase Louisiana's CO₂ emissions nearly 2 percent over 2019 levels.⁷

5. In addition, Commonwealth sits in southwest Louisiana, an area of the country with several environmental justice communities and a long history of heavy industrialization, with the attendant consequences for those surrounding communities. Indeed, many of the communities in the area exhibit rates of cancer, asthma, and other

⁵ *N. Nat. Gas Co.*, 174 FERC ¶ 61,189, at P 32 (2021). As I have previously stated, this is something we regularly do with respect to myriad different environment impacts. See, e.g., *Columbia Gulf Transmission, LLC*, 180 FERC ¶ 61,206 (2022) (Glick, Chairman, concurring at P 4); *Tenn. Gas Pipeline Co.*, 179 FERC ¶ 61,041 (2022) (Glick, Chairman, concurring at P 5 & nn.190-93).

⁶ This figure was calculated using the U.S. Environmental Protection Agency's Greenhouse Gas Equivalencies Calculator. See U.S. Envtl. Prot. Agency, Greenhouse Gas Equivalencies Calculator, <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator> (last visited Nov. 15, 2022).

⁷ Final Environmental Impact Statement, Docket Nos. CP19-502-000, et al., at 4-396 (Sept. 2022).

serious ailments that are well above the national average.⁸ I believe that the Commission has both a legal and moral obligation to seriously consider the impacts of any facility it sites in these communities, including both the impacts directly attributable to the facility itself and cumulatively along with other facilities in the area. Today's order adopts the conclusion in the EIS that the facility will have significant visual impacts on certain surrounding environmental justice communities. And while I agree with that conclusion, I believe we must also continue to revise and refine our approach to environmental justice to ensure that we are adequately identifying all adverse impacts for environmental justice communities, mitigating them to the extent possible, and then seriously considering them in our public interest analysis.

6. Bearing those considerations in mind, this order aptly illustrates the dilemma we face under NGA section 3. We have what is clearly, at least in my opinion, a significant adverse impact in the form of 3.5 million tons of GHGs, but the potentially countervailing benefit to that adverse impact, namely the export of natural gas, falls outside our jurisdiction. Under that circumstance, it is not at all clear how the Commission is supposed to adequately assess the public interest, including the adverse impacts, without also considering the actual export and import, which Congress did not give this Commission jurisdiction to consider within our public interest determination. On the one hand, I find it difficult to believe that the Commission can consider *only* the adverse impacts associated with a section 3 facility and not the benefits the export or import may provide, as that would seem to tilt the public interest determination against the facility, which would be at least philosophically inconsistent with the standard of review, which as noted favors approval of the facility. On the other though, the courts have made clear that a section 3 facility's adverse impacts, including with respect to climate change and environmental justice, must be part of public interest determination under section 3 and inquiry that fails to seriously weigh those factors would also be legally suspect.⁹

7. That uncertainty creates a challenging situation, to put it mildly, for all stakeholders, including the Commission. After all, surely there is a degree of adverse impact so great that the public interest requires the Commission to reject a section 3 application. But without a clear framework for making that determination in light of the substantial benefits that LNG exports can provide (after all, Congress deemed exports to our free trade partners to be categorically in the public interest), there is unavoidable

⁸ See Kimberly A. Terrell & Gianna St. Julien, *Air Pollution Is Linked to Higher Cancer Rates Among Black or Impoverished Communities In Louisiana*, Environ. Res. Lett. 17 (Jan. 2022), available at: <https://iopscience.iop.org/article/10.1088/1748-9326/ac4360/pdf>.

⁹ *Vecinos para el Bienestar de la Comunidad Costera v. FERC*, 6 F.4th 1321, 1331 (D.C. Cir. 2022).

uncertainty regarding how the Commission can and should weigh adverse impacts. When it comes to infrastructure that costs billions of dollars and impacts the surrounding community and the environment more generally, uncertainty is bad for everyone. For that reason, I believe it would be beneficial for Congress to clarify how the Commission is supposed to weigh the public interest factors under section 3, including the benefits provided by imports and exports of LNG.

For these reasons, I respectfully concur.

Richard Glick
Chairman

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Commonwealth LNG, LLC

Docket Nos. CP19-502-000
CP19-502-001

(Issued November 17, 2022)

DANLY, Commissioner, *concurring in the judgment:*

1. I concur in the decision to grant Commonwealth LNG, LLC's (Commonwealth) Natural Gas Act (NGA)¹ authorization to site, construct, and operate a natural gas liquefaction and export facility, including an NGA section 3 natural gas pipeline, in Cameron Parish, Louisiana (Commonwealth LNG Project).
2. There are any number of problems with this order: we should not lose sight of the limits of our authority under the NGA,² we should have repudiated *Northern*,³ and we should not have included Social Cost of Greenhouse Gases calculations in this proceeding's environmental document.⁴ All of these issues have been thoroughly

¹ 15 U.S.C. § 717b.

² See, e.g., *Gulf S. Pipeline Co., LLC*, 181 FERC ¶ 61,145 (2022) (Danly, Comm'r, concurring in part and dissenting in part at P 3).

³ *Id.* (Danly, Comm'r, concurring in part and dissenting in part at P 4); see *N. Nat. Gas Co.*, 174 FERC ¶ 61,189 (2021) (*Northern*). In *Northern*, a majority of my colleagues established what has been referred to (by some) as the “eyeball” test. See Catherine Morehouse, *Glick, Danly spar over gas pipeline reviews as FERC considers project’s climate impacts for first time*, UTIL. DIVE, Mar. 19, 2021, <https://www.utilitydive.com/news/glick-danly-spar-over-gas-pipeline-reviews-as-ferc-considers-projects-cl/597016/> (“‘We essentially used the eyeball test,’ [Chairman Glick] said, adding that based on that analysis, ‘it didn’t seem significant in terms of the impact of those emissions on climate change.’”).

⁴ *Gulf S. Pipeline Co., LLC*, 181 FERC ¶ 61,145 (Danly, Comm'r, concurring in the judgment at P 7); see also Final Environmental Impact Statement at 4-397 & 4-398 (Final EIS).

canvassed in my concurrently-issued separate statement in *Gulf South Pipeline Company, LLC*⁵ and in many earlier separate statements and need not here be repeated at length.

3. I will start by acknowledging that the Commission is acting on this authorization relatively quickly following the release of the Final EIS, which was issued on September 9, 2022. This order comes 69 days later. I note that the Commission's action is approximately two months earlier than I recently predicted for the issuance of the order.⁶

4. I cannot overstate the importance of timely action on our pending NGA section 3 applications. Simply put, "LNG . . . is needed right now."⁷ FERC Staff's 2022 Summer Assessment Report recognized as much.⁸ Moreover, the Commission has come to

⁵ *Gulf S. Pipeline Co., LLC*, 181 FERC ¶ 61,145.

⁶ See Commission Danly November 4, 2022 Letter to Senator Barrasso at App. D, page 75 (predicting a January 9, 2023 order issuance date by estimating 4 months as the time between the final NEPA document and order issuance because that was the average processing time from January 1, 2019, to May 24, 2021).

⁷ See Senate Energy & Nat. Res. Committee, *Full Committee Hearing To Review FERC's Recent Guidance On Natural Gas Pipelines*, <https://www.energy.senate.gov/hearings/2022/3/full-committee-hearing-to-review-ferc-s-recent-guidance-on-natural-gas-pipelines>, at 01:02:24 (Mar. 3, 2022) (recording Chairman Manchin).

⁸ See FERC Staff Report to the Commission, Summer Energy Market and Reliability Assessment, at 6 (May 19, 2022), <https://www.ferc.gov/media/report-summer-assessment-2022> ("Higher natural gas prices for summer 2022 are expected at major trading hubs across the U.S. as demand growth is forecasted to exceed supply growth amid increases in LNG liquefaction capacity, increase exports due to global demand for LNG, and limited growth in natural gas production.") (FERC Staff's Summer 2022 Assessment Report); *id.* at 7 ("The surrounding Gulf Coast region should see a combination of strong industrial sector and electric power sector demand this summer in addition to record LNG export demand."); *id.* at 8 ("Natural gas production from the nearby Appalachia region is typically more than able to meet summer demand in the Northeast and New England, resulting in slightly reduced natural gas prices as compared to the Texas and Louisiana Gulf Coasts (South Texas to Henry Hub), which have significant year-round demand for electric power generation, industrial processes, and LNG exports."); *id.* at 9-10 ("International LNG prices continue to remain relatively high in 2022 amid supply uncertainties and the need to replenish Europe's natural gas inventories, which combined with increased liquefaction capacity in the U.S. is expected to drive higher LNG exports from the U.S.") (citing EIA, *Short-Term Energy Outlook Market Review - Natural Gas* (April 7, 2022), <https://www.eia.gov/outlooks/steo/marketreview/natgas.php>); *id.* at 11 ("[H]igh European natural gas prices have recently incentivized more LNG exports to the continent, with

understand that several project sponsors with pending applications expect their projects will supply Europe’s demand for LNG.⁹ And unlike the application at issue in this proceeding, some of the applications for NGA section 3 authorizations continue to suffer unnecessary delay.

5. Two such projects are pending with the Commission on remand. On August 3, 2021, the U.S. Court of Appeals for the District of Columbia Circuit (D.C. Circuit) remanded, without vacatur, authorization orders for two such projects due to deficiencies under the Administrative Procedure Act (APA) in the Commission’s analysis of environmental justice issues and the Commission’s failure to respond to an argument regarding section 1502.21(c) of the Council on Environmental Quality’s National Environmental Policy Act regulations¹⁰ when deciding whether it should use the Social Cost of Carbon.¹¹ It has been more than a year since the Commission reacquired jurisdiction over the orders on remand.¹² And on August 12, 2022, in one of the relevant

shipments to Europe outpacing exports to Asia beginning in December 2021. Continued increased international demand should incentivize high utilization rates of and exports from U.S. LNG export terminals throughout summer 2022.”) (citation omitted); *id.* at 41 (“Natural gas exports are forecast to contribute to natural gas demand growth, as LNG exports continue to increase.”); *id.* (“U.S. energy sector participants may continue to expand production and export supplies needed globally, such as LNG.”).

⁹ See *Rio Grande LNG, LLC*, 181 FERC ¶ 61,032, at P 5 (2022) (“expects to play a role in supplying Europe’s demand for LNG as the European Union attempts to reduce reliance on Russian energy supplies.”); *Port Arthur LNG, LLC*, 181 FERC ¶ 61,024, at P 3 n.7 (2022) (“Sempra Infrastructure Partners, LP has entered into negotiations with multiple European companies that contemplate negotiation of long-term sale and purchase agreements for LNG from the Liquefaction Project.”); see also Texas LNG Brownsville LLC, Request for Commission Action on Remand for Texas LNG Project, Docket No. CP16-116-000, at 2 (Aug. 12, 2022) (explaining that the applicant “is in active discussions with buyers of LNG, particularly in Europe, and is optimistic about the commercial environment and the opportunity to provide energy security to strategic allies of the United States”).

¹⁰ 40 C.F.R. § 1502.21(c).

¹¹ *Vecinos para el Bienestar de la Comunidad Costera v. FERC*, 6 F.4th 1321 (D.C. Cir. 2021) (*Vecinos*).

¹² The remaining authorizations at issue on remand are for Texas LNG Brownsville LLC’s Texas LNG Project in Docket No. CP16-116 (Brownsville Project) and Rio Grande LNG, LLC’s Rio Grande LNG Terminal in Docket No. CP16-454 and Rio Bravo Pipeline Company, LLC’s Rio Bravo Pipeline Project in Docket No. CP16-455 (collectively, Rio Projects). For the authorizations relevant to Rio Projects, the D.C.

dockets, *i.e.*, Docket No. CP16-116-000, Texas LNG Brownsville, LLC (Texas LNG) indicated that it “is in active discussions with buyers of LNG, particularly in Europe, and is optimistic about the commercial environment and the opportunity to provide energy security to strategic allies of the United States.”¹³ In that filing, Texas LNG requested prompt Commission action on remand and explained that “[t]he lack of Commission action on remand is having a material impact on Texas LNG” and that “Texas LNG has significant internal and external technical resources standing by to continue the development and eventual construction of the project, but without a final order on remand, Texas LNG lacks much-needed clarity on timing for project planning purposes.”¹⁴ On November 4, 2022, Texas LNG again requested that the Commission promptly issue an order on remand.¹⁵

6. Rio Grande LNG, LLC has also recently requested prompt Commission action on remand.¹⁶ And members of Congress have reached out to the Commission regarding the delay.¹⁷ Even still, these efforts to underscore the importance of timely Commission

Circuit’s mandate issued on October 25, 2021. For the authorizations relevant to the Brownsville Project, the D.C. Circuit’s mandate issued on September 27, 2021. In regard to the authorizations for Annova LNG Common Infrastructure, LLC’s Annova LNG Brownsville Project in Docket No. CP16-480, the court in *Vecinos* “dismiss[ed] the petition . . . as moot.” *Vecinos*, 6 F.4th at 1327. The Commission granted a request to vacate the Annova LNG Brownsville Project authorization on April 15, 2021. *Annova LNG Common Infrastructure, LLC*, 175 FERC ¶ 61,030 (2021).

¹³ Texas LNG Brownsville LLC, Request for Commission Action on Remand for Texas LNG Project, Docket No. CP16-116-000, at 2 (Aug. 12, 2022).

¹⁴ *Id.* at 2-3.

¹⁵ See Texas LNG Brownsville LLC, Reply Comments, Docket No CP16-116-000, at 18 (Nov. 4, 2022).

¹⁶ Rio Grande LNG, LLC, Reply Comments, Docket Nos. CP16-454-000, *et al.* (Nov. 4, 2022) (stating “that the Commission has all information required in order to issue an order properly responding to the D.C. Circuit’s Remand Order as well as the long-pending Rio Bravo Amendment Application in Docket No. CP20-481, and respectfully requests that the Commission promptly and as expeditiously as possible issue an order on remand”).

¹⁷ See U.S. Senator John Cornyn, November 4, 2022 Letter, Docket No. CP16-454-000, at 1 (observing that the project sponsor is “is well-positioned to provide LNG supply to our allies in Europe” and urging the Commission to resolve the pending proceedings in a timely manner); U.S. Representative Dan Crenshaw, August 22, 2022 Letter, Docket Nos. CP16-116, et al., at 1-2 (explaining the importance of LNG exports

action have all been unavailing. In the remand dockets, Commission staff took the unprecedented step of opening comment periods on the companies' responses for Commission staff's information request. Those comment periods closed on November 4, 2022, and action still has yet to be taken.¹⁸

7. It is beyond dispute that demand for American LNG has risen dramatically and that its importance as a geo-strategic commodity has become more critical than ever before. The costs caused by the Commission's delays are profound.¹⁹ Delay in

and requesting an explanation for the delay in acting on remand).

¹⁸ See Commission Staff, Notice Seeking Public Comment on Responses to Information Requests re Texas LNG Brownsville LLC, Docket No. CP16-116-000 (Sept. 30, 2022) (establishing an October 21, 2022 deadline for initial comments and a November 4, 2022 deadline for reply comments); Commission Staff, Notice Seeking Public Comment on Responses to Information Requests re Rio Grande LNG, LLC and Rio Bravo Pipeline Co., LLC, Docket Nos. CP16-454-000, et al. (Sept. 30, 2022) (same). But see Chairman Glick Response to U.S. Representative Dan Crenshaw's August 22, 2022 Letter, Docket No. CP16-116-000, et al., at 1 (Oct. 31, 2022) ("Once the comment period closes, the Commission will move forward with action addressing the Court's remand.").

¹⁹ See, e.g., *Nat'l Grid LNG, LLC*, 179 FERC ¶ 61,205, at PP 5-7 (2022) (explaining that although National Grid LNG, LLC "planned to begin construction of the project at the end of 2016[,] . . . it did not receive certificate authorization until October 2018," and therefore it requested an increase in its initial recourse rates since the estimated cost of the facilities increased from \$180,256,679 to \$390,829,000—a difference of \$210,572,321—as a result of increased construction costs due to the timing change and construction work plan changes). Cf. Duke Energy, *Dominion Energy and Duke Energy cancel the Atlantic Coast Pipeline* (July 5, 2020), <https://news.duke-energy.com/releases/dominion-energy-and-duke-energy-cancel-the-atlantic-coast-pipeline> (announcing Dominion Energy's and Duke Energy's cancellation of the Atlantic Coast Pipeline Project—a project with a Commission-issued certificate of public convenience and necessity—due to "ongoing delays and increasing cost uncertainty which threaten[ed] the economic viability of the project" and explaining that the project faced many challenges, including: (1) adverse court decisions regarding their federal permit for waterbody and wetland crossings (Nationwide Permit 12), which led to uncertainty in the companies' investment; and (2) "legal challenges to the project's federal and state permits[,] [which] caused significant project cost increases and timing delays" and resulted in an estimated "project cost . . . increase[] to \$8 billion from the original estimate of \$4.5 to \$5.0 billion" as well as an estimated delay of "three-and-a-half-year[s]" for the project's in-service date).

processing applications results in greater project expenses and difficulty securing capital on commercially acceptable terms. The climate of uncertainty created by our delays threatens the entire LNG industry. When regulatory timelines are uncertain, risk premiums rise, and it becomes more difficult for investors to rationally allocate capital in this capital-intensive industry. Simply put, regulatory uncertainty chills investment and impairs an industry the Commission is charged with promoting.²⁰ Although I am not aware of it happening in a recent NGA section 3 application, we have already witnessed proposed NGA section 7 projects²¹ withdrawn due to Commission inaction.²² Had we acted quickly, and had those projects met with Commission approval, they could have delivered critical, desperately needed natural gas.

8. Turning to the substance of today’s order, I disagree with the Commission’s attempt to sugarcoat its “analysis” just because we are unable to determine the

²⁰ See *NAACP v. FPC*, 425 U.S. 662, 669-70 (1976) (recognizing that the purpose of the NGA is to “encourage the orderly development of plentiful supplies of . . . natural gas at reasonable prices”) (citations omitted).

²¹ 15 U.S.C. § 717f.

²² See, e.g., Adelphia Gateway, LLC, Withdrawal of Prior Notice, Docket No. CP21-14-000, at 2 (Oct. 12, 2021) (withdrawing a request to install and operate an additional electric-motor driven compressor unit at its already authorized Marcus Hook Compressor Unit because “as a result of the extension of the environmental review through the supplemental EIS process and a prolonged Commission review process, the Project has been delayed well beyond Adelphia’s expectations and, more specifically, there is significant uncertainty regarding when an order will issue in this docket” and “[i]n light of this, Adelphia has decided not to continue the development of the Project”); Eastern Gas Transmission & Storage, Letter Withdrawing its Applications for the Mid-Atlantic Cooler Project, Docket No. CP21-97-000, at 1 (Sept. 20, 2021) (withdrawing an application for an NGA section 7 certificate—which had been filed nearly six months prior and had requested permission to build minor upgrades to three compressor stations in Pennsylvania and Virginia—because, “[d]espite [the project’s] limited scope, the Commission has not taken action to prepare an Environmental Assessment”); Dominion Energy Transmission Inc., Withdrawal of Certificate Application for Sweden Valley Project, Docket No. CP18-45-000 (June 28, 2019) (withdrawing an application for a project that “involved limited facilities, including modification of an existing compressor station and the construction of two measuring stations, approximately five miles of pipeline and related ancillary facilities” because “the Project has been adversely impacted” and “[t]he Project customer has opted to terminate the requested transportation service” as a result of the Commission’s inaction on the application nearly ten months after the issuance of an environmental assessment).

significance of GHG emissions. Today's order states that “[b]y adopting the climate impact analysis in the EIS, [the Commission] recognize[s] that the project may release GHG emissions that contribute incrementally to future global climate change impacts” and that the Commission has “identified climate change impacts in the region.”²³ Exactly what climate change impacts in the region did the Commission “identif[y]”?²⁴ There certainly appear to be no “identified climate change impacts” in the record. Could it be that the Commission is referring to no more than the disclosure of estimated emissions associated with the project’s construction and operation, or the comparison of the project’s GHG emissions to the total GHG emissions of the United States as a whole, or the comparison to state GHG inventories, or the comparison of a project’s GHG emissions to a state’s GHG emissions reduction goals?²⁵ Is the Commission merely referring to its discussion in the Final EIS of the U.S. Global Change Research Program’s Fourth Assessment Report, which was published in 2017 and 2018, and that report’s “observations” and “projections” of “climate change impacts” for the Southeast region of the United States?²⁶ Never mind the “climate change impacts,” where in the record can we find the “climate impact analysis” upon which that identification of impacts purports to rely? Can the Commission’s mere disclosure of direct emissions estimates and their bald comparison to state inventories truly be considered “analysis” when nothing can be gleaned from that information?²⁷ This is especially doubtful given that the Commission has no means by which to determine the significance of those estimated emissions.

²³ Commonwealth LNG, LLC, 181 FERC ¶ 61,143, at P 75 (2022) (citations omitted) (*Commonwealth*).

²⁴ *Id.*

²⁵ See Final EIS at 4-396 to 4-397.

²⁶ See *id.* at 4-394 & 4-395 (citing U.S. GLOBAL CHANGE RESEARCH PROGRAM, CLIMATE SCIENCE SPECIAL REPORT, FOURTH NATIONAL CLIMATE ASSESSMENT, VOLUME I (Donald J. Wuebbles et al. eds) (2017), https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf (USGCRP Report Volume I); U.S. GLOBAL CHANGE RESEARCH PROGRAM, FOURTH NATIONAL CLIMATE ASSESSMENT, VOLUME II IMPACTS, RISKS, AND ADAPTATION IN THE UNITED STATES (David Reidmiller et al. eds.) (2018), https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf (USGCRP Report Volume II)).

²⁷ See Merriam-Webster, <https://www.merriam-webster.com/dictionary/analysis> (defining “analysis” as “a detailed examination of anything complex in order to understand its nature or to determine its essential features : a thorough study”); Cambridge Dictionary, <https://dictionary.cambridge.org/dictionary/english/analysis> (defining “analysis” as “the act of studying or examining something in detail, in order to discover or understand more about it, or your opinion and judgment after doing this”);

9. Without a credible, reasoned method to determine significance, the Commission has a rocky road ahead should it continue in its pursuit of environmental policy goals. Aside from the legal risk under the APA that would attend the establishment of any unsupported, arbitrary threshold, a reading of the Supreme Court’s decision in *West Virginia v. Environmental Protection Agency*²⁸ should impress upon the Commission that caution is necessary when contemplating the regulation of subjects that have not been clearly placed within our jurisdiction by Congress. “Agencies have only those powers given to them by Congress, and ‘enabling legislation’ is generally not an ‘open book to which the agency [may] add pages and change the plot line.’”²⁹ Notably, the Commission received a much-needed reminder of this several months ago when the U.S. Court of Appeals for the Fifth Circuit vacated a portion of the Commission’s order that was *ultra vires* because the Commission’s acted outside its statutory authority.³⁰ Because the Commission does not have “a clear delegation from [Congress]”³¹ to regulate GHG emissions, the Commission’s charge under the NGA remains “encourag[ing] the orderly development of plentiful supplies of . . . natural gas at reasonable prices.”³² In other words, the NGA’s purpose, established by Congress and articulated by the Supreme Court, is for the Commission to *promote* the development of natural gas infrastructure.

10. What it comes down to is this—until a credible methodology, based on reasoned decision making, is established by a competent agency with the requisite statutory authority, the Commission cannot conclude whether the estimated GHG emissions from a proposed project are significant. The answer to the Commission’s problem is not to

Oxford Learner’s Dictionaries, <https://www.oxfordlearnersdictionaries.com/definition/english/analysis> (defining “analysis” as “the detailed study or examination of something in order to understand more about it; the result of the study”).

²⁸ *West Virginia v. EPA*, 142 S. Ct. 2587 (2022).

²⁹ *Id.* at 2609 (citation omitted).

³⁰ See *Midship Pipeline Co., L.L.C. v. FERC*, 45 F.4th 867, 877 (5th Cir. 2022) (vacating part of the Commission’s order and remanding the remainder because “[t]he FERC’s interpretation of the NGA to give the agency power to determine ‘the reasonable cost’ of remediation efforts ‘change[d] the plot line’ of its enabling legislation, and was therefore erroneous” and “[t]he FERC lacks such authority under the NGA, and it likewise lacked authority to order an ALJ to make such a determination indirectly”) (quoting *West Virginia v. EPA*, 142 S. Ct. at 2609).

³¹ *West Virginia v. EPA*, 142 S. Ct. at 2616.

³² *NAACP*, 425 U.S. at 669-70 (citations omitted); accord *Myersville Citizens for Rural Cnty.*, 783 F.3d 1301, 1307 (quoting *NAACP*, 425 U.S. at 669-70).

paper over the lack of analytical material in its orders by simply declaring that it has conducted “analysis” that has led to the identification of unspecified “impacts.” Ignore the Commission’s characterization of what it is doing; look instead to what it actually does. Equally important is what it fails to do. The Commission has *never* established a reasoned, credible basis upon which to ascribe significance under NEPA to a given quantity of project-level GHG emissions, using the Social Cost of Carbon or any other metric. Nor has the Commission been able to connect a particular project’s GHG emissions to discrete, physical effects on the environment. Why? Because there exist no means by which to arrive at such a determination such that it would satisfy our obligations under the APA to engage in reasoned decision making.

For these reasons, I respectfully concur in the judgment.

James P. Danly
Commissioner

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Commonwealth LNG, LLC

Docket Nos. CP19-502-000
CP19-502-001

(Issued November 17, 2022)

CLEMENTS, Commissioner, *concurring*:

1. I concur with the decision to authorize the Commonwealth LNG Project because it is consistent with our precedents on issuing conditional authorizations under the Natural Gas Act.¹ This project shows why we should reconsider our approach.²
2. Commonwealth's proposed LNG terminal would be located on the shoreline of the Calcasieu Ship Channel, less than one mile from the Gulf of Mexico.³ The terminal would occupy approximately 105 acres, of which 89 are wetlands that would be permanently lost.⁴ There are also two waterbodies on the site that would be permanently impacted.⁵ The project's marine facilities will occupy another 47 acres of open water.⁶ Commonwealth will excavate and dredge approximately 1.73 million cubic yards of sediment from the Calcasieu Ship Channel to create an LNG tanker berthing area; it will dredge another 152,000 yards every two years for maintenance. Considering these facts, Commonwealth's proposal could be fairly characterized as a water-based project. Yet,

¹ See, e.g., *Broadwater Energy LLC*, 124 FERC ¶ 61,225 (2008); *Crown Landing LLC*, 117 FERC ¶ 61,209 (2006). Courts have found the practice of issuing conditional authorizations lawful. See, e.g., *Del. Riverkeeper Network v. FERC*, 857 F.3d 388, 399 (2017). However, just because courts have allowed this approach does not mean it is good policy.

² I have questioned the wisdom of conditional authorizations in other contexts. E.g., *PennEast Pipeline Co., LLC*, 174 FERC ¶ 61,056 (2021) (Glick, Chair, and Clements, Comm'r, concurring).

³ Final Environmental Impact Statement for the Commonwealth LNG Project, Docket Nos. CP19-502-000 and CP19-502-001 (Sept. 2022) at p. 2-1.

⁴ *Id.* at pp. 2-9, 4-83.

⁵ *Id.* at p. 4-74.

⁶ *Id.* at p. 2-7.

the agencies responsible for issuing critical water-related permits have not yet acted.⁷ Their future decisions could well result in changes to the project or to planned environmental mitigation measures. As we issue the order today, neither the Commission nor the public we serve can predict, let alone evaluate, what those changes might mean for the environment or for the health and welfare of the environmental justice and other communities affected by the project.

3. I am troubled that there will be no opportunity for public comment on these moving pieces, at least as part of the Commission's approval process. The Commission should consider whether to provide a formal opportunity for public comment on the final environmental impact statement (EIS) to assure we have input on changes made after the draft EIS was issued.⁸ This is not necessarily a question of what is legally required of the Commission as the lead agency under the National Environmental Policy Act (though to be sure some intervenors and commenters contend we have fallen short of our legal obligations, demonstrating the increased legal risk project authorizations face from the rush to act without full consideration of material information). Even more fundamentally, it is a policy question of how best to protect the public interest, which is our charge under the Natural Gas Act. Keeping impacted members of the public fully informed is the first step. Genuinely listening to them is the vital next step.

4. Perhaps most important, we must continue our efforts to inform affected environmental justice communities about proposed projects, as well as potential changes to those projects and planned mitigation measures. We then must directly and actively solicit their input on potential mitigation measures. As I heard during the Commission's listening sessions leading to the development of our Office of Public Participation and in subsequent meetings with environmental justice community representatives, we need

⁷ For example, the Army Corps of Engineers has not yet issued critical Clean Water Act section 404 and Rivers and Harbors Act section 10 permits for the project. Moreover, the Louisiana Department of Natural Resources has not issued a coastal use permit, which will serve as its consistency determination under the federal Coastal Zone Management Act.

⁸ As reflected in the Commission's order, the location for placement of dredged material changed from the time of the draft EIS to the final EIS. *Commonwealth LNG, LLC*, 181 FERC ¶ 61,143, at P 34 (2022) (Order). On October 26, 2022, the National Marine Fisheries Service (NMFS) submitted extensive comments to the Commission, which raised concerns with the new plan for the dredged material. The Commission's order says these concerns will be addressed sometime in the future by the Army Corps of Engineers and possibly the Fish and Wildlife Service. Order at P 34. The public has had no opportunity to comment on the issues the NMFS has raised, nor can it possibly know at this stage how the agencies will resolve these concerns.

more direct and sustained engagement to assure these communities are fully informed and have a meaningful opportunity to explain on the record what specific mitigation measures are needed. Today's conditional authorization cannot assure that a meaningful opportunity was provided to environmental justice communities in this instance. The Commission's dedicated staff have helped us to improve our performance in this regard, but we must do more.⁹

5. Finally, I support the Chairman's call for Congress to provide a clear framework for the Commission to make its public interest determination under section 3 of the Natural Gas Act.¹⁰

For these reasons, I respectfully concur.

Allison Clements
Commissioner

⁹ For example, we should *require* project sponsors to submit plans for engaging with the affected public, including environmental justice communities, on the essential elements of emergency response plans for LNG facilities. I am heartened that this order at least encourages Commonwealth to do so voluntarily. I hope the company will set a strong example for the LNG industry in its engagement with environmental justice communities.

¹⁰ Order (Glick, Chairman, concurring, at P 7).

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Commonwealth LNG, LLC

Docket Nos. CP19-502-000
CP19-502-001

(Issued November 17, 2022)

PHILLIPS, Commissioner, *concurring*:

1. I concur on today's order as it is consistent with Commission precedent. I believe strongly that applicants, environmental groups, and communities are entitled to consistent, predictable outcomes from the Commission. With that said, I am concerned with our approach to mitigating impacts on environmental justice communities, especially those already enduring negative impacts from industrial development.
2. Commonwealth LNG is located on the Chenier Plain, an almost treeless, flat marsh surrounded by the Sabine Wildlife Refuge on the Calcasieu Ship Channel and the Gulf of Mexico. The facility will be adjacent to the existing Calcasieu Pass LNG Terminal and the proposed CP2 LNG Terminal, and just over 2 miles away from, and within view of Cameron, Louisiana. Cameron is a small town of approximately 219 people, 36% of whom live below the poverty level, which is a higher percentage than the parish in which the town is located. The facility will be directly north, and within view of, Holly Beach, a recreational area on the Gulf that serves tourists, who make valuable economic contributions to the area, and nearby residents. This is a significant burden for any community to bear, and I have deep reservations about the consolidation of these negative visual impacts on this small town.
3. With that said, the diligent work of our staff did not identify any other disproportionately high and adverse health or environmental impacts to this environmental justice community. Furthermore, Commonwealth LNG cites its community engagement in the area and provides mitigation consistent with our precedent for the severity of its impacts.¹ I believe as a general matter applicants should make

¹ Compare *Commonwealth LNG, LLC*, 181 FERC ¶ 61,143, at P 72 (2022) (describing the Facility Lighting Plan and tree planning to reduce visual impacts) with *Annova LNG Common Infrastructure, LLC*, 169 FERC ¶ 61,132, at P 51 (2019) (describing the Facility Lighting Plan to reduce visual impacts); *Venture Global Plaquemines LNG*, 168 FERC ¶ 61,204 at Appendix, Environmental Condition 1 (requiring proposed mitigation plans); Plaquemines LNG Final Environmental Impact Statement, CP17-66-000 at 4-64 (describing the Facility Lighting Plan to reduce visual

efforts to improve community outcomes at large and I especially view efforts to recruit job applicants within the community to be of great value. Specifically in areas in which there are developing and cumulative impacts, I believe such measures may be necessary.

For these reasons, I respectfully concur.

Willie L. Phillips
Commissioner

impacts).

183 FERC ¶ 61,173
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Willie L. Phillips, Acting Chairman;
James P. Danly, Allison Clements,
and Mark C. Christie.

Commonwealth LNG, LLC

Docket No. CP19-502-002

ORDER ADDRESSING ARGUMENTS RAISED ON REHEARING

(Issued June 9, 2023)

1. On November 17, 2022, the Commission issued an order authorizing Commonwealth LNG, LLC (Commonwealth) to site, construct, and operate a natural gas liquefaction and export facility, including a Natural Gas Act (NGA) section 3 natural gas pipeline, in Cameron Parish, Louisiana (Commonwealth LNG Project).¹ On December 19, 2022, Sierra Club, Natural Resources Defense Council, Center for Biological Diversity, Healthy Gulf, the Louisiana Bucket Brigade, the National Audubon Society, and Turtle Island Restoration Network (together, the Environmental Coalition or Coalition) jointly filed a timely request for rehearing of the Authorization Order.

2. Pursuant to *Allegheny Defense Project v. FERC*,² the rehearing request filed in this proceeding may be deemed denied by operation of law. However, as permitted by NGA section 19(a),³ we are modifying the discussion in the Authorization Order and continue to reach the same result in this proceeding, as discussed below.⁴

¹ *Commonwealth LNG, LLC*, 181 FERC ¶ 61,143 (2022) (Authorization Order).

² 964 F.3d 1 (D.C. Cir. 2020) (en banc).

³ 15 U.S.C. § 717r(a) (“Until the record in a proceeding shall have been filed in a court of appeals, as provided in subsection (b), the Commission may at any time, upon reasonable notice and in such manner as it shall deem proper, modify or set aside, in whole or in part, any finding or order made or issued by it under the provisions of this chapter.”).

⁴ *Allegheny Def. Project*, 964 F.3d at 16-17. The Commission is not changing the outcome of the Authorization Order. See *Smith Lake Improvement & Stakeholders Ass’n v. FERC*, 809 F.3d 55, 56-57 (D.C. Cir. 2015).

I. Background

3. On August 20, 2019, as amended July 8, 2021, Commonwealth filed an application under NGA section 3⁵ and Part 153 of the Commission's regulations⁶ for authorization to site, construct, and operate the Commonwealth LNG Project in Cameron Parish, Louisiana. The Commonwealth LNG Project will be located on the west side of the Calcasieu Ship Channel, near the entrance to the Gulf of Mexico.⁷
4. On March 31, 2022, Commission staff issued a Draft Environmental Impact Statement (draft EIS) for the Commonwealth LNG Project. The Environmental Coalition provided comments on the draft EIS. On September 9, 2022, Commission staff issued the final Environmental Impact Statement (final EIS) for the Commonwealth LNG Project. As relevant to this proceeding, both the draft and final EIS discussed the U.S. Fish and Wildlife Service's (FWS) biological opinion, which addressed the potential effects of the project on eastern black rails. In the Authorization Order, the Commission accepted the environmental recommendations in the final EIS, as modified in the order, and incorporated the recommendations as conditions in Appendix A of the order.⁸ The Commission concluded that the Commonwealth LNG Project, if implemented as described in the final EIS and the order, would constitute an environmentally acceptable action, determined that the project is not inconsistent with the public interest, and thus authorized Commonwealth under section 3 of the NGA to site, construct, and operate the project.⁹

II. Procedural Issues

5. On December 8, 2022, the Louisiana Bucket Brigade submitted a comment expressing its disagreement with the Commission's issuance of the Authorization Order and requesting its rescission. The comment did not meet our requirements for rehearing requests;¹⁰ however, Louisiana Bucket Brigade is part of the Environmental Coalition

⁵ 15 U.S.C. § 717b.

⁶ 18 C.F.R. pt. 153 (2021).

⁷ For further discussion of the project's specifications, *see* Authorization Order, 181 FERC ¶ 61,143, at PP 3-6.

⁸ Authorization Order, 181 FERC ¶ 61,143 at P 84 & app. A.

⁹ *Id.* PP 84-86, ordering para. (A).

¹⁰ *See* 18 C.F.R. § 385.713 (2022); *Transcon. Gas Pipe Line Co., LLC*, 182 FERC ¶ 61,148 (2023) (rejecting a rehearing request for failure to comply with Rule 713 of the

that submitted the Rehearing Request which raises similar issues; thus, we generally address its concerns below.

6. On January 3, 2022, Commonwealth filed a motion for leave to answer and answer to the Environmental Coalition's rehearing request. The Commission's Rules of Practice and Procedure generally prohibit answers to a request for rehearing.¹¹ Accordingly, we deny Commonwealth's motion to answer and reject its answer.

III. Discussion

7. On rehearing, the Environmental Coalition argues the Commission erred in the Authorization Order by failing to: (1) properly weigh the project's adverse impacts against its benefits under NGA section 3; (2) rigorously explore all reasonable alternatives; (3) properly consider greenhouse gas (GHG) emissions; (4) properly consider air pollution impacts, particularly on environmental justice communities; and (5) properly consider impacts to certain species, including the bottlenose dolphin and eastern black rail.

A. NGA Section 3

8. The Environmental Coalition asserts that the Commission "failed to articulate a coherent standard for the exercise of its NGA section 3 authority," arguing that the Commission did not properly balance the benefits and harms of the Commonwealth LNG Project when making its public interest determination.¹² The Coalition states that Congress provided separate authority for the approval of exports of the natural gas commodity, which is handled by the Department of Energy (DOE), and the approval of natural gas infrastructure which is handled by the Commission.¹³ The Coalition argues

Commission's Rule of Practice and Procedure, including failing to include a Statement of Issues).

¹¹ 18 C.F.R. § 385.713(d)(1); *id.* § 385.213(a)(2) (2022).

¹² Rehearing Request at 7.

¹³ See 15 U.S.C. §§ 717b(a), (e). The regulatory functions of NGA section 3 were transferred to the Secretary of Energy of the DOE in 1977 pursuant to section 301(b) of the Department of Energy Organization Act, Pub. L. No. 95-91, 42 U.S.C. § 7101 *et seq.* The Secretary subsequently delegated to the Commission the authority to approve or disapprove the construction and operation of natural gas import and export facilities and the site at which such facilities shall be located. The most recent delegation is in DOE Delegation Order No. S1-DEL-FERC-2006, effective May 16, 2006. The Commission does not authorize importation or exportation of the commodity itself. Rather, applications for authorization to import or export natural gas must be submitted to the

that approval of the former does not necessarily require approval of the latter.¹⁴ The Coalition observes that the Commission has previously denied an application for an import terminal pursuant to its section 3(e) authority, but argues that the Commission cannot limit its rejection of infrastructure to instances where it would violate other statutory requirements or another agency's standards.¹⁵ Rather, to determine whether a project is not inconsistent with the public interest, the Coalition argues the Commission must balance "the degree of the harm against the magnitude of the benefit."¹⁶

9. The Commission articulated the appropriate standard for evaluating a proposal under NGA section 3. The Authorization Order recognizes that "Section 3 provides that an application shall be approved if the Commission finds the proposal 'will not be [in]consistent with the public interest,' subject to 'such terms and conditions as the Commission [may] find necessary or appropriate.'"¹⁷ That an NGA section 3 proposal "shall" be authorized unless it "will not be consistent with the public interest,"¹⁸ "sets out a general presumption favoring such authorization[s]."¹⁹ Although NGA section 3(e) authorizes the Commission "to approve or deny an application,"²⁰ courts have explained

DOE. *See EarthReports, Inc. v. FERC*, 828 F.3d 949, 952-53 (D.C. Cir. 2016) (detailing how regulatory oversight for the export of LNG and supporting facilities is divided between the Commission and DOE).

¹⁴ *Id.* Rehearing Request at 8.

¹⁵ *Id.* (referencing *KeySpan LNG, L.P.*, 112 FERC ¶ 61,028 (2005) in which the Commission rejected an application for an LNG terminal because the proposed facilities did not meet the Department of Transportation's safety standards for LNG import facilities).

¹⁶ *Id.* at 9.

¹⁷ Authorization Order, 181 FERC ¶ 61,143 at P 10 (citing 15 U.S.C. § 717b(a), (e)(3)).

¹⁸ 15 U.S.C. § 717b(a).

¹⁹ *Ctr. for Biological Diversity v. FERC*, 67 F.4th 1176, 1188 (D.C. Cir. 2023) (*Alaska LNG*); *EarthReports v. FERC*, 828 F.3d at 953 (quoting *W. Va. Pub. Servs. Comm'n v. U.S. Dep't of Energy*, 681 F.2d 847, 856 (D.C. Cir. 1982)); *see also Sierra Club v. U.S. Dep't of Energy*, 867 F.3d 189, 203 (D.C. Cir. 2017).

²⁰ 15 U.S.C. § 717b(e).

that to overcome the favorable presumption in NGA section 3(a) there must be an “affirmative showing of inconsistency with the public interest.”²¹

10. As stated in the Authorization Order, “Commission staff [] prepared a comprehensive EIS thoroughly analyzing all environmental impacts properly associated with our action of approving the siting and operation of the Commonwealth LNG Project.”²² The EIS found that “although some impacts would be permanent and significant, such as impacts on visual resources, most impacts would not be significant or would be reduced to less-than-significant levels with the implementation of avoidance, minimization, and mitigation measures recommended in the EIS and adopted by [the Authorization Order].”²³ The Commission determined that the presumption that the project is not inconsistent with the public interest was not overcome and explained that “after careful consideration of the entire record of this proceeding, including the findings and recommendations of the final EIS, [found] that, subject to the conditions imposed in [the Authorization Order], Commonwealth’s proposal is not inconsistent with the public interest.”²⁴ The Coalition has not shown that the Commission did not satisfy its statutory obligation in this case.²⁵

11. In light of this analysis, we disagree with the Environmental Coalition’s claims that the Commission ceded its NGA section 3 authority by relying solely on DOE’s authorization that permits Commonwealth to export natural gas to nations with which the United States has a free trade agreement.²⁶ As discussed above, the Commission

²¹ *Sierra Club v. U.S. Dep’t of Energy*, 867 F.3d at 203 (quoting *Panhandle Producers & Royalty Owners Ass’n v. Econ. Regul. Admin.*, 822 F.2d 1105, 1111 (D.C. Cir. 1987)).

²² Authorization Order, 181 FERC ¶ 61,143 at P 15.

²³ *Id.*

²⁴ *Id.* P 18.

²⁵ See *Alaska LNG*, 67 F.4th at 1188 (“The NGA ‘sets out a general presumption favoring ... authorization.’ *W. Va. Pub. Servs. Comm’n v. Dep’t of Energy*, 681 F.2d 847, 856 (D.C. Cir. 1982). FERC’s approval of the Project easily comports with the NGA. The Commission expressly concluded the Project was in the public interest because it would have substantial economic and commercial benefits, and these benefits were not outweighed by the projected environmental impacts.”).

²⁶ See Authorization Order, 181 FERC ¶ 61,143 at P 6 (“On April 17, 2020, the Department of Energy’s Office of Fossil Energy (DOE/FE) authorized Commonwealth to export 9.5 MTPA (1.21 Bcf/d) of LNG to nations with which the United States has a Free Trade Agreement (FTA) for a 25-year term. Commonwealth’s application to export up to

determined that Commonwealth's proposal is not inconsistent with the public interest based on the entirety of the record, subject to certain conditions contained in the Authorization Order, and did not rely solely on DOE's export authorization. The Commission made an independent judgment regarding the merits of the application before it.

B. Alternatives

12. The Environmental Coalition argues that the Commission failed to consider the following alternatives to the extent required by the National Environmental Policy Act (NEPA). We preface our discussion by noting that where, as here, a federal agency is not the sponsor of a project, "the Federal government's consideration of alternatives may accord substantial weight to the preferences of the applicant and/or sponsor in the siting and design of the project."²⁷ Moreover, courts have upheld federal agencies' use of applicants' project purpose and need in environmental documents and as the basis for evaluating alternatives.²⁸ When an agency is asked to consider a specific proposal, the needs and goals of the parties involved in the application should be taken into account.²⁹ Further, because the alternatives considered under NEPA are informed both by "the project sponsor's goals,"³⁰ as well as "the goals that Congress has set for the agency,"³¹

9. 5 [million tonnes per annum (MTPA)] of LNG to non-FTA nations is pending with DOE/FE.").

²⁷ *City of Grapevine, Tex. v. Dep't of Transp.*, 17 F.3d 1502, 1506 (D.C. Cir. 1994) (quoting *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 197 (D.C. Cir. 1991) (*Citizens Against Burlington*)).

²⁸ E.g., *City of Grapevine v. U.S. Dep't of Transp.*, 17 F.3d at 1506; *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d at 199; (explaining that the evaluation of alternatives is "shaped by the application at issue and by the function that the agency plays in the decisional process.").

²⁹ *Citizens Against Burlington*, 938 F.2d at 196.

³⁰ *Id.* at 196.

³¹ *Sierra Club v. U.S. Forest Serv.*, 897 F.3d 582, 598-99 (4th Cir. 2018) (finding the statement of purpose and need for a Commission-jurisdictional natural gas pipeline project that explained where the gas must come from, where it will go, and how much the project would deliver, allowed for a sufficiently wide range of alternatives but was narrow enough that there were not an infinite number of alternatives).

i.e., the goals set in enacting the NGA, the Commission’s consideration of alternatives includes the no-action alternative and alternatives that achieve the purpose of the project.

1. Volume of Proposed Exports

13. The Coalition raises two arguments in support of its contention that the Commission improperly restricted alternatives to those that would allow Commonwealth to export the full volume of gas authorized by DOE.³²

a. Liquefaction Process

14. The Coalition first argues that the Commission improperly rejected the “C3MR” liquefaction technology alternative, which it asserts is more efficient, requires less gas for the liquefaction process, and emits less pollution per ton of LNG produced than Commonwealth’s proposed “AP-SMR” process.³³ The Coalition admits that the final EIS explained that the C3MR process would require an additional 12 acres, but argues that the Commission did not explain how it determined that expanding the site by 12 acres would result in greater impacts than those that would result from the additional air pollution from the AP-SMR process, or why the project’s footprint could not remain the same and Commonwealth could simply produce less LNG.³⁴ The Coalition asserts that the Commission has the authority to approve the project at a lower capacity than Commonwealth proposed, and that the Commission could conclude that the benefits of a more efficient export terminal outweigh the additional export capacity.³⁵

15. Courts review an agency’s selection of alternatives under NEPA using the “rule of reason,” where an agency must reasonably define its goals for the proposed action, and an alternative is reasonable if it can feasibly achieve those goals.³⁶ When an agency is

³² Rehearing Request at 10-11.

³³ *Id.* at 11.

³⁴ *Id.* at 11-12.

³⁵ *Id.* at 12.

³⁶ See, e.g., *Friends of Se. ’s Future v. Morrison*, 153 F.3d 1059, 1066-67 (9th Cir. 1998) (stating that while agencies are afforded “considerable discretion to define the purpose and need of a project,” agencies’ definitions will be evaluated under the rule of reason.); *City of Alexandria v. Slater*, 198 F.3d 862, 867 (D.C. Cir. 1999). See also 43 C.F.R. § 46.420(b) (2016) (defining “reasonable alternatives” as those alternatives “that are technically and economically practical or feasible and meet the purpose and need of the proposed action”).

tasked to decide whether to adopt a private applicant's proposal, a reasonable range of alternatives to the proposal includes rejecting the proposal (i.e., the no-action alternative), adopting the proposal, or adopting the proposal with some modification.³⁷ An agency may eliminate those alternatives that will not achieve a project's goals or which cannot be carried out because they are too speculative, infeasible, or impractical.³⁸

16. The Commission adequately considered the C3MR alternative. In response to environmental information requests from Commission staff, Commonwealth explained that the AP-SMR process is efficient for mid-scale LNG facilities and that the C3MR process is most often used in much larger LNG trains than those that would be used at the project (i.e., trains over 4-5.5 million tonnes per annum (MTPA) versus the 1.4 MTPA trains proposed for the project).³⁹ In the final EIS, Commission staff explained why Commonwealth selected the AP-SMR process over the C3MR alternative.⁴⁰ Specifically, Commission staff found that the project footprint would be nearly 70% greater for the C3MR technology than for the AP-SMR technology.⁴¹ For the Commonwealth project, this would extend the footprint of the project an additional 12 acres into eastern black rail

³⁷ See *Theodore Roosevelt Conservation P'ship v. Salazar*, 661 F.3d 66, 72-74 (D.C. Cir. 2011).

³⁸ See *Alaska LNG*, 67 F.4th at 1182 (recognizing that agencies may reject alternatives that will be impractical or fail to further the proposed action's purpose after only brief discussion); *Fuel Safe Wash. v. FERC*, 389 F.3d 1313, 1323 (10th Cir. 2004) (stating that the Commission need not analyze "the environmental consequences of alternatives it has in good faith rejected as too remote, speculative, or . . . impractical or ineffective.") (quoting *All Indian Pueblo Council v. U. S.*, 975 F.2d 1437, 1444 (10th Cir. 1992) (internal quotation marks omitted)); *Nat. Res. Def. Council, Inc. v. Morton*, 458 F.2d 827, 837-38 (D.C. Cir. 1972) (same); see also *Nat'l Wildlife Fed'n v. FERC*, 912 F.2d 1471, 1485 (D.C. Cir. 1990) (stating that "NEPA does not require detailed discussion of the environmental effects of remote and speculative alternatives") (citation omitted).

³⁹ Commonwealth Response to June 9, 2022 Environmental Information Request at 10 (filed June 24, 2022) (June 24 Response).

⁴⁰ See final EIS at 3-47.

⁴¹ *Id.*

habitat and/or wetlands, and thus would offer no significant environmental advantage to the proposed project.⁴²

17. The Coalition fails to offer any argument to support its assertion that the adverse effects associated with the using C3MR technology at the project may be outweighed by its suggested decrease in air pollution. The Coalition instead argues that the project could use the C3MR process without expanding its footprint by producing less LNG. We find that the Commission appropriately concluded that AP-SMR technology is preferable based on environmental considerations and because it is Commonwealth's preferred design: the fact that the Coalition disputes this determination does not, in and of itself, undermine its propriety.⁴³ NEPA, as a procedural statute, requires nothing more in this case.⁴⁴

b. System Alternatives

18. The Environmental Coalition's systems alternatives argument fails for the same reason. The Coalition argues that the Commission erred by not considering alternatives that would reduce the volumes of LNG that Commonwealth is authorized by DOE to export and contends that because there are other LNG projects that are not fully

⁴² *Id.*; see also *Birckhead v. FERC*, 925 F.3d 510, 515 (D.C. Cir. 2019) (recognizing that the Commission's determination that an alternative site "does not have a significant advantage over the proposed site" is "sufficient under NEPA").

⁴³ See *Minisink Residents for Env't Pres. & Safety v. FERC*, 762 F.3d 97, 112 (D.C. Cir. 2014) ("Though we can see how Petitioners may disagree with [the Commission's] takeaway, their disagreement does not mean that FERC failed to consider the issue altogether, as they suggest."); *W. Watersheds Project v. Bureau of Land Mgmt.*, 721 F.3d 1264, 1278 (10th Cir. 2013) ("[T]he relevant question is whether the impact of the [p]roposed [d]ecision can be reasonably predicted from the EA's analysis, not whether it is the best possible decision.").

⁴⁴ See *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 756-57 (2004) ("NEPA imposes only procedural requirements on federal agencies with a particular focus on requiring agencies to undertake analyses of the environmental impact of their proposals and actions."); *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989) ("[I]t is now well settled that NEPA itself does not mandate particular results, but simply prescribes the necessary process. If the adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by NEPA from deciding that other values outweigh the environmental costs.") (internal citations omitted); *Citizens Against Burlington, Inc.*, 938 F.2d at 194 (explaining that NEPA "directs agencies only to look hard at the environmental effects of their decisions, and not to take one type of action or another").

subscribed, the unsubscribed capacity at these projects should be considered as an alternative to the Commonwealth LNG Project.⁴⁵ This argument misapprehends the division of authority between the Commission and DOE under the NGA. The final EIS recognized that because each of the other LNG terminals cited by Environmental Coalition is authorized by (or has applied to) DOE to export to FTA countries, the NGA provides that those exports are in the public interest and, consequently, the Commission is unable to conclude that any of that capacity could be diverted to accommodate the purpose and need of the Commonwealth LNG Project.⁴⁶ The final EIS reasonably concluded that shifting any portion of the project's proposed capacity to another LNG facility would necessarily require an expansion or new facilities at the other project(s), resulting in similar environmental impacts to those that may occur at the Commonwealth LNG Project.⁴⁷ The final EIS thus found that these system alternatives would not offer a significant environmental advantage over the proposed Commonwealth LNG Project.⁴⁸

19. The Coalition takes issue with this conclusion, arguing that the Commission should not assume that the environmental impacts at another LNG facility would be as adverse as those that may occur at the Commonwealth LNG Project.⁴⁹ It asserts that increased production at another LNG facility may be preferable if that facility uses a more efficient liquefaction design.⁵⁰ However, the Coalition has not identified a specific alternative for the Commission's consideration that could offer evidence to support this claim.⁵¹ The Commission has previously recognized that “[u]nsupported, hypothetical

⁴⁵ Rehearing Request at 14.

⁴⁶ See final EIS at 3-29; see also 15 U.S.C. § 717b(c).

⁴⁷ Final EIS at 3-29 (“We must conclude Commonwealth’s proposed export capacity at any other existing or proposed LNG facility would require an expansion or new facilities. Some of the facilities, such as Freeport LNG, are unlikely to have the available acreage to expand its facilities to accommodate the purpose and need of the Project. For those remaining LNG facilities, there may be available acreage to expand the existing or proposed facilities. However, expansion would require similar structures as the facilities proposed for the Terminal, resulting in environmental impacts similar to the Project.”).

⁴⁸ *Id.*

⁴⁹ Rehearing Request at 15.

⁵⁰ *Id.*

⁵¹ See *Tenn. Gas Pipeline Co., LLC*, 181 FERC ¶ 61,051, at P 24 (2022).

alternatives are not reasonable alternatives that warrant further NEPA consideration.”⁵² As the Coalition offers no record evidence to substantiate this argument, we need go no further.⁵³

2. Design Alternatives

20. The Environmental Coalition argues that the Commission also failed to explore several design alternatives that would still provide Commonwealth’s proposed export capacity.

a. On-Site Power Generation

21. The Environmental Coalition first argues that significant reductions in emissions could be achieved by running turbines in combined-cycle (rather than simple-cycle as approved) to generate on-site electricity.⁵⁴ The Coalition contends the Commission improperly rejected two ways to employ combined cycle turbines—replacing all turbines with 500-megawatts (MW) of electrical generation and replacing the 120-MW of proposed on-site generation with combined cycle units.⁵⁵

i. Combined-Cycle for all of the Project’s Power

22. The Coalition argues that the final EIS failed to discuss the extent to which an on-site combined-cycle gas-fired power plant would decrease total air emissions.⁵⁶ We find that Commonwealth adequately explained why this alternative was not proposed for the project and Commission staff provided extensive discussion in the final EIS considering this alternative and rejecting it as not providing a significant environmental

⁵² *Mountain Valley Pipeline, LLC*, 163 FERC ¶ 61,197, at P 139 (2018).

⁵³ The Coalition relatedly disputes the premise that no other facilities have available capacity, but this argument is unavailing for the reasons already discussed. Rehearing Request at 14-15. Additionally, if, as the Coalition appears to suggest, some of the other proposed facilities will not be built, *id.* at 15, that would presumably result in even less capacity that could potentially serve as a substitute for the Commonwealth LNG Project.

⁵⁴ Rehearing Request at 16-17.

⁵⁵ *Id.* at 18.

⁵⁶ *Id.*

advantage.⁵⁷ The Coalition’s disagreement with this determination does not undermine the fact that the Commission considered the alternative and rejected it with a reasonable explanation.⁵⁸ NEPA does not require anything more.⁵⁹

23. The Coalition next contends that an increase in acreage needed for the combined-cycle power plant may be offset by a reduction in space needed for liquefaction equipment.⁶⁰ However, the Coalition provides no evidence, analysis, or citations to substantiate or explain this assertion. We, accordingly, reject this argument.⁶¹

24. The Coalition argues the Commission could require Commonwealth to power all of the turbines with an on-site combined-cycle gas-fired power plant.⁶² The Coalition asserts that the final EIS’ conclusion that the requisite 500-MW power plant “would require an approximately 100-acre footprint” is unsupported and is contradicted by the fact that two other facilities—the Orange County Advanced Power Station in Texas and Nemadji Trail Energy Center Generation Project in Wisconsin—generate more power in a smaller footprint.⁶³ We begin by recognizing that the Coalition has not previously identified either of these facilities and thus these examples are not properly before us on rehearing.⁶⁴ Regardless, the Coalition offers no evidence or analysis to support its claim

⁵⁷ See final EIS at 3-48 (“The additional space of a combined cycle, either 120 MW or 500 MW, would require an expansion of the Terminal into eastern black rail habitat and wetlands. Therefore, we conclude that this alternative would not provide a significant environmental advantage to Commonwealth’s proposal to construct the smaller simple cycle gas-powered system.”).

⁵⁸ See *Minisink*, 762 F.3d at 112; *W. Watersheds Project v. Bureau of Land Mgmt.*, 721 F.3d at 1278.

⁵⁹ See, e.g., *Native Ecosystems Council v. U.S. Forest Serv.*, 428 F.3d 1233, 1247 (9th Cir. 2005) (“So long as all reasonable alternatives have been considered and an appropriate explanation is provided as to why an alternative was eliminated, the regulatory requirement is satisfied.”) (internal quotation marks omitted).

⁶⁰ Rehearing Request at 20.

⁶¹ See, e.g., *Turlock Irrigation Dist.*, 140 FERC ¶ 61,207, at P 27 (2012) (“This is nothing more than a bald assertion . . . and is waived for lack of specificity.”).

⁶² *Id.*

⁶³ *Id.* at 18-19 (citing final EIS at 3-48).

⁶⁴ See, e.g., *Middletown Coke Co., LLC*, 182 FERC ¶ 61,231, at P 10 (2023) (“Parties are not permitted to introduce new evidence for the first time on rehearing since

that these facilities would be analogous to the power plant needed for the project. The fact that the Orange County Advanced Power Station project is projected to generate 1,215 MW of power on 26.2 acres and the Nemadji Trail Energy Center Generation Project is projected to generate 625 MW of power on 26.3 acres shows the potential for significant variability in project output relative to acres occupied.⁶⁵ As the Coalition fails to provide any explanation for why these projects should be considered analogous to the combined-cycle plant that would be required for the project, particularly in light of the myriad variables at play and the fact that they are built for fundamentally different purposes, we are unpersuaded by their argument that a 500 MW combined-cycle power plant for the project would not require approximately an additional 100 acres in this instance.⁶⁶

25. We also note that the Commission did not reject this alternative solely based on the additional acreage that would be required. For example, Commonwealth explained that converting natural gas to electricity, then back to mechanical power, with variable frequency drive (VFD) electrical motors, is not the most efficient solution because the losses associated with the high voltage gear and the VFDs eliminate any benefit such solution may have in comparison with gas turbine direct mechanical drive of the refrigeration compressors and recovery of the gas turbines waste heat.⁶⁷ Based on this information, we continue to find that the Commission acted reasonably in rejecting this alternative.

such practice would allow an impermissible moving target and would frustrate needed administrative finality.”) (quoting *Rio Grande LNG, LLC*, 170 FERC ¶ 61,046, at P 94 (2018)).

⁶⁵ See Rehearing Request at 19.

⁶⁶ See June 24 Response at 10 (“The use of a combined cycle power plant was also evaluated. A 500-MW power plant would be required to drive the refrigeration compressors using electric motors, and to also provide the 120-MW auxiliary load needed for the balance of the plant. Such a power plant would require an additional 100 acres, thus essentially doubling the current overall footprint and environmental impact.”).

⁶⁷ *Id.*

ii. Combined-Cycle for 120-MW of the Project's Power

26. The Coalition also argues that the Commission erred by rejecting an alternative that would use a combined-cycle 120-MW power plant.⁶⁸ We disagree. The final EIS explained that a combined cycle power plant converts more energy from fuel gas to electricity than simple cycle generators, but the refrigerant compressor gas turbine drives consume more fuel than simple cycle generators; thus, while converting 120 MW of on-site simple cycle power generation to combined cycle would result in a reduction in emissions, the reduction would be less than 10%.⁶⁹ The Coalition argues that even a reduction of less than ten percent would be advantageous; however, the final EIS balanced that estimated emissions reduction against the increased land usage that would be required for a 120-MW combined cycle power plant, ultimately concluding that the construction of a 120-MW combined cycle power plant would require expansion of the project into eastern black rail habitat and wetlands, and therefore would not provide a significant environmental advantage over Commonwealth's proposed design.⁷⁰ This sort of balancing of benefits and harms as part of the Commission's alternatives analysis under NEPA is squarely within the Commission's discretion.⁷¹ Moreover, it is well-settled that NEPA does not mandate particular results or selection of the least environmentally damaging alternative so long as each alternative is adequately discussed and a brief explanation is provided for why an alternative is rejected.⁷² For the same reasons as discussed above in the context of the 500-MW combined cycle alternative, we are unpersuaded by the Coalition's two examples of combined cycle power stations—the

⁶⁸ Rehearing Request at 20-22.

⁶⁹ Final EIS at 3-48.

⁷⁰ *Id.*

⁷¹ See, e.g., *Minisink*, 762 F.3d, at 112 ("In reviewing an agency's compliance with NEPA, the rule of reason applies, and we consistently decline to flyspeck an agency's environmental analysis.") (cleaned up); *Klein v. U.S. Dep't of Energy*, 753 F.3d 576 (6th Cir. 2014) ("In carrying out [NEPA], the agency has considerable discretion.").

⁷² See *Robertson v. Methow Valley Citizens Council*, 490 U.S. at 350 ("[I]t is now well settled that NEPA itself does not mandate particular results, but simply prescribes the necessary process. If the adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by NEPA from deciding that other values outweigh the environmental costs.") (citations omitted); see also 40 C.F.R. § 1502.14(a) (2022) ("Evaluate reasonable alternatives to the proposed action, and, for alternatives that the agency eliminated from detailed study, briefly discuss the reasons for their elimination.").

Malburg Generating Station in California and the Donald Von Raesfeld Project—which produce around 120 MW on a footprint that the Coalition asserts, without explanation, should be replicable at the project. Accordingly, we disagree that the Commission erred in rejecting the 120-MW combined cycle alternative.

b. Carbon Capture and Sequestration

27. The Environmental Coalition argues that the Commission failed to rigorously explore, or to justify the rejection of, carbon capture and sequestration (CCS), either for all or part of the project’s emissions.⁷³ The Coalition contends that the final EIS relies on Commonwealth’s statement that CCS is not feasible but fails to indicate whether the Commission agrees with that position or provide information supporting the position.⁷⁴ The Coalition also points to the fact that other developers have proposed to incorporate CCS technology into their LNG terminal designs.⁷⁵

28. We disagree that the final EIS failed to adequately analyze the feasibility of incorporating CCS technology into the project design. The final EIS incorporated information from a Best Available Control Technology Analysis (BACT Analysis) filed by Commonwealth in September 2021⁷⁶ and concluded that, although the project is technically able to capture carbon dioxide (CO₂) due to Commonwealth’s proposal to use an amine-based absorber system, there is insufficient CO₂ sequestration infrastructure in place to make CCS viable for the project.⁷⁷ Specifically, there are no CO₂ sequestration facilities beneath the Gulf of Mexico seabed in Cameron Parish or near the project site, and nearby projects are still in development, such as the Gulf Coast Sequestration Project (onshore in southwest Louisiana near the Sabine River on the Louisiana-Texas border and west of Lake Charles) and the Hackberry Carbon Sequestration project (proposed for construction approximately 16 miles northwest of the Project and with the business plan of capturing, transporting, and storing CO₂ primarily from Cameron LNG).⁷⁸ The closest operating CO₂ sequestration facility is the Denbury Green Pipeline (a CO₂ pipeline that

⁷³ *Id.* at 23.

⁷⁴ *Id.* at 24.

⁷⁵ *Id.*

⁷⁶ See Commonwealth Response to September 15, 2021 Environmental Information Request at app. F (filed Sept. 30, 2021).

⁷⁷ Final EIS at 4-398.

⁷⁸ *Id.*

is 37 miles from the Project).⁷⁹ With respect to CO2 transport, Commonwealth explained in comments on the draft EIS that the required CO2 sequestration pipeline infrastructure does not currently exist and that it would have to construct an approximately 37-mile-long CO2 pipeline and associated infrastructure to transport CO2 from the project to the Denbury Green Pipeline.⁸⁰ Based on the foregoing and because the requisite infrastructure does not exist, we find that such an alternative is appropriately rejected and infeasible.

c. Storage Tanks

29. The Environmental Coalition disputes the final EIS' rejection of an alternative that would use five storage tanks rather than six.⁸¹ The Coalition argues that the EIS' conclusion that a five-tank design would increase air pollution through additional flaring is unsupported and that the EIS fails to consider that the reduced impacts to 2.3 acres of wetlands with a five-tank design may enable Commonwealth to use the aforementioned combined-cycle powerplant.⁸² Additionally, the Coalition argues that the Commission has not presented sufficient evidence to show that any increase in air emissions from the five-tank design would be offset by a potential 10% reduction in emissions through the use of a combined-cycle power plant.⁸³

30. In the final EIS, Commission staff considered Commonwealth's proposal to increase the capacity of its six storage tanks from 40,000 m³ to 50,000 m³ and concluded that "the possible benefits of the increased storage capacity, with no increase in the [project] footprint from the original application, would be preferable to the potential adverse air impacts due to increased flaring events of Commonwealth having to shut

⁷⁹ *Id.*

⁸⁰ See Commonwealth Response to Comments on March 31, 2022 Draft Environmental Impact Statement at 20 (filed July 7, 2022).

⁸¹ Rehearing Request at 25.

⁸² *Id.* at 25-26.

⁸³ *Id.* at 26-27.

down and restart the [project] at a higher annual frequency than would otherwise occur.”⁸⁴ We continue to agree with that conclusion.⁸⁵

31. Commonwealth stated that the project’s footprint would not be reduced by eliminating one of the six storage tanks, and that there are operational reasons for requesting Commission authorization of six 50,000 m³ storage tanks.⁸⁶ For example, in a response to a Commission staff data request, Commonwealth explained that, during an adverse weather event that closes the channel, the “additional storage capacity allows the facility to continue operating, possibly at a reduced rate, until such weather event has passed, and LNG carriers can resume operation.”⁸⁷ In the same response, Commonwealth provided a list of 33 instances in which the Calcasieu Ship Channel closed from the beginning of January 2021 through the end of August 2021.⁸⁸ In light of this evidence, and noting that the Commonwealth LNG Project is only proposing to construct a single berthing dock (which limits the flexibility with which Commonwealth could reduce tank inventory when needed compared to facilities with multiple berths),⁸⁹ we find these operational considerations well-founded. Accordingly, we are not persuaded by the Coalition’s argument.⁹⁰

⁸⁴ Final EIS at 3-46. Commonwealth’s initial application proposed a design that included six LNG storage tanks with capacities of 40,000 m³ per tank for a total storage capacity of 240,000 m³. In Commonwealth’s July 2021 application amendment, Commonwealth adjusted the proposed design of the LNG storage tanks to enable capacities of 50,000 m³ per tank for total storage capacity of 300,000 m³. *Id.*

⁸⁵ See, e.g., *Comm. of 100 on Fed. City v. Foxx*, 87 F.Supp.3d 191, 201 (D.D.C. 2015) (“Courts reviewing an agency’s environmental analysis generally defer to the informed discretion of the agency on an issue that requires a high degree of technical expertise.”) (citing *Del. Riverkeeper v. FERC*, 753 F.3d 1304, 1313 (D.C. Cir. 2014)).

⁸⁶ Commonwealth Response to September 15, 2021 Environmental Information Request at 36 (filed September 30, 2021) (September 30 Response).

⁸⁷ *Id.* at 36.

⁸⁸ *Id.* at 37-39.

⁸⁹ Authorization Order, 181 FERC ¶ 61,143 at P 3.

⁹⁰ With respect to the Coalition’s argument that the potential reduction in emissions that would result from omitting a storage tank could be offset by using combined-cycle power, we have already addressed the Coalition’s arguments for

3. No-Action Alternative

32. The Environmental Coalition argues that Commission staff's analysis of the No-Action Alternative is inconsistent with NEPA.⁹¹ The Coalition states that the No-Action Alternative improperly assumes that the environmental baseline includes aspects of the proposed project and that consideration of alternative energy sources is beyond the scope of the EIS because such sources would not meet the project's aims.⁹² In other words, the Coalition argues that the No-Action Alternative assumed the existence of the proposed project.⁹³ The Coalition contends the Commission also erred by failing to address the No-Action Alternative in the Authorization Order.⁹⁴

33. We disagree that the final EIS failed to properly evaluate the No-Action Alternative. As a threshold matter, an agency does not err by rejecting a No-Action Alternative that would not fulfill the project's purpose.⁹⁵ Regardless, the final EIS did not, as the Coalition argues, "assume the baseline includes aspects of the proposed project."⁹⁶ To the contrary, the final EIS explicitly contemplates a "no build" scenario in which the project would not be developed, Commonwealth's objective of liquefying and exporting natural gas to foreign markets would not be realized, and the potential environmental impacts associated with the project would not occur.⁹⁷ Under this scenario, however, end users of LNG would be required to make different arrangements to meet their needs, and the Commission is unable to speculate that any portion of liquefaction capacity at other LNG terminals would be available to meet that demand because DOE's export approval is a determination that the authorized capacity at these

combined-cycle power and concluded they are without merit. *See supra* PP 22-25. We need not revisit this issue in the context of storage tanks.

⁹¹ Rehearing Request at 27.

⁹² *Id.* at 28-29.

⁹³ *Id.* at 29.

⁹⁴ *Id.* at 30.

⁹⁵ *Alaska LNG*, 67 F.4th at 1182 (holding that the Commission did not err by concisely rejecting the No-Action Alternative when it would not fulfill the project's purpose to commercialize natural gas from Alaska's North Slope).

⁹⁶ Rehearing Request at 28.

⁹⁷ Final EIS 3-26.

other facilities is in the public interest to satisfy other demand requirements.⁹⁸ In other words, the Commission cannot conclude that any potential environmental impacts that may be avoided by forgoing the instant project would not otherwise be replicated by a corresponding increase in capacity elsewhere. As any environmental benefits that may be realized by adopting the No-Action Alternative are speculative,⁹⁹ and because the no-action alternative would fail to meet the proposal’s purpose and objective,¹⁰⁰ we continue to find that the discussion and rejection of the No-Action Alternative was reasonable and appropriate.

34. It follows, then, that Coalition’s argument that the Commission improperly dismissed “alternative energy sources” as a component of the No-Action Alternative that would obviate the need for the project also fails. As explained above, an agency may eliminate alternatives that will not achieve a project’s goals or are otherwise unreasonable.¹⁰¹ Here, no entity provided a specific project alternative for Commission consideration. The Final EIS concluded that neither the no-action alternative nor any alternative energy source is capable of meeting the purpose of the project, and were therefore eliminated from further consideration.¹⁰² We find this determination appropriate; for purposes of NEPA, an agency may take into account an applicant’s needs and goals when assessing alternatives, so long as it does not limit the alternatives to only those that would adopt the applicant’s proposal.¹⁰³

35. Finally, the Coalition’s contention that the Authorization Order is arbitrary and capricious because it did not “discuss or acknowledge the No-Action Alternative” is

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ See *Friends of Se.’s Future v. Morrison*, 153 F.3d at 1067 (holding that the U.S. Forest Service “did not act unreasonably in rejecting the no-action alternative on the ground that it would not meet the purpose and need of the proposed project”); see also *Native Ecosystems*, 428 F.3d at 1247 (“Alternatives that do not advance the purpose of the [project] will not be considered reasonable or appropriate.”).

¹⁰¹ See *Fuel Safe Wash. v. FERC*, 389 F.3d at 1323 (quoting *All Indian Pueblo Council v. U.S.*, 975 F.2d at 1444); *Nat. Res. Def. Council, Inc. v. Morton*, 458 F.2d at 837-38; see also *Nat’l Wildlife Fed’n v. FERC*, 912 F.2d at 1485.

¹⁰² Final EIS at 3-26.

¹⁰³ See *Theodore Roosevelt Conservation P’ship*, 661 F.3d at 73-74.

incorrect.¹⁰⁴ In the Authorization Order, the Commission reviewed the information and analysis contained in the final EIS, including the alternatives analysis, which, as noted above, discussed the no-action alternative.¹⁰⁵ The fact that the Commission did not reproduce the alternatives discussion from the final EIS in the Authorization Order does not mean that it disregarded the no-action alternative, only that the recommendations in the final EIS were not subsequently modified in the Authorization Order.

C. GHGs

36. The Environmental Coalition next argues that “FERC is . . . required by NEPA and the NGA to consider the direct and cumulative effects on climate change in its public interest analysis and to determine whether a project’s reasonably foreseeable GHGs are significant.”¹⁰⁶ The Environmental Coalition argues the Commission failed to do so and thus “violates NEPA, and in turn, poisons FERC’s section 3 NGA public interest balancing.”¹⁰⁷ Furthermore, the Coalition argues that the Commission must consider indirect emissions under NEPA, and therefore its failure to do so was unlawful under the NGA.¹⁰⁸

37. As an initial matter, the Commission’s NGA and NEPA responsibilities are separate and distinct.¹⁰⁹ The Commission’s balancing under the public interest

¹⁰⁴ Rehearing Request at 30.

¹⁰⁵ See Authorization Order, 181 FERC ¶ 61,143 at P 84; *id.* P 25 (“The final EIS addresses geology, soils, water resources, wetlands, vegetation, wildlife, aquatic resources, threatened and endangered species, land use, recreation, visual resources, socioeconomics, environmental justice, cultural resources, air quality, noise, safety, cumulative impacts, and identified alternatives.”) (emphasis added).

¹⁰⁶ Rehearing Request at 31 (citing 40 C.F.R. § 1502.16(a)(1)).

¹⁰⁷ *Id.* at 32.

¹⁰⁸ *Id.* As we explained in the Authorization Order, under *Freeport*, the Commission need not consider the effects of upstream production or downstream transportation, consumption, or combustion of exported gas because the DOE’s “independent decision to allow exports . . . breaks the NEPA causal chain and absolves the Commission of responsibility to include [these considerations] in its NEPA analysis.” Authorization Order, 181 FERC ¶ 61,143 at P 77 (quoting *Sierra Club v. FERC*, 827 F.3d 36, 48 (D.C. Cir. 2016) (*Freeport*)).

¹⁰⁹ See *Transcon. Gas Pipe Line Co.*, 182 FERC 61,148, at P 101 (2023).

standard¹¹⁰ is consistent with the purpose of the NGA¹¹¹ and is therefore afforded deference.¹¹² As the U.S. Court of Appeals for the District of Columbia Circuit has explained, the NGA section 3 standard that a proposal “shall” be authorized unless it “will not be consistent with the public interest[,]”¹¹³ “sets out a general presumption favoring such authorization[s].”¹¹⁴ To overcome this favorable presumption and support denial of an NGA section 3 application, there must be an “affirmative showing of inconsistency with the public interest.”¹¹⁵ The Commission explained that this

¹¹⁰ See Authorization Order, 181 FERC ¶ 61,143. See also *Alaska LNG*, 67 F.4th 1176, 1188 (D.C. Cir. 2023) (explaining that “[t]he NGA ‘sets out a general presumption favoring ... authorization’” and “FERC’s approval of the Project easily comports with the NGA”).

¹¹¹ See *NAACP v. Fed. Power Comm’n*, 425 U.S. 662, 669 (1976) (explaining that the Supreme Court “ha[s] consistently held that the use of the words ‘public interest’ in a regulatory statute is not a broad license to promote the general public welfare[,] [r]ather, the words take meaning from the purposes of the regulatory legislation”); *id.* (explaining that the purpose of the NGA as to “encourage the orderly development of plentiful supplies of . . . natural gas at reasonable prices” and also observing that there are subsidiary purposes to the Act) (citation omitted).

¹¹² See *Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 844 (1984) (“a court may not substitute its own construction of a statutory provision for a reasonable interpretation made by the administrator of an agency.”); see also *Myersville Citizens for a Rural Cnty., Inc. v. FERC*, 783 F.3d 1301, 1308 (D.C. Cir. 2015) (“Because the grant or denial of a Section 7 certificate of public convenience and necessity is a matter ‘peculiarly within the discretion of the Commission,’ *Okla. Natural Gas Co. v. Fed. Power Comm’n*, 257 F.2d 634, 639 (D.C. Cir. 1958), this court does not ‘substitute its judgment for that of the Commission,’ *Nat’l Comm. for the New River v. FERC*, 373 F.3d 1323, 1327 (D.C. Cir. 2004).”).

¹¹³ 15 U.S.C. § 717b(a). In addition, NGA section 3(c) provides that the exportation of gas to FTA nations “shall be deemed to be consistent with the public interest.” *Id.* § 717b(c). Commonwealth has received authorization to export to FTA nations.

¹¹⁴ *EarthReports v. FERC*, 828 F.3d at 953 (quoting *W. Va. Pub. Servs. Comm’n v. U.S. Dep’t. of Energy*, 681 F.2d 847 at 856); see also *Sierra Club v. U.S. Dep’t of Energy*, 867 F.3d at 203).

¹¹⁵ *Sierra Club v. U.S. Dep’t of Energy*, 867 F.3d at 203 (quoting *Panhandle Producers & Royalty Owners Ass’n v. Econ. Regul. Admin.*, 822 F.2d at 1111).

presumption was not overcome.¹¹⁶ In conducting its public interest analysis under NGA section 3, the Commission is not required to characterize the project's estimated GHG emissions as significant or insignificant; no court has held to the contrary.

38. As to NEPA, the Environmental Coalition claims that the Commission failed to comply with a CEQ regulation requiring that an environmental impact statement include a "discussion" of "the environmental impacts of the proposed action and reasonable alternatives to the proposed action and the significance of those impacts."¹¹⁷ Although the Commission did not characterize the estimated emissions as significant or insignificant, the Commission's discussion disclosed and contextualized the reasonably foreseeable GHG emissions.¹¹⁸ We explain further below that there currently are no accepted tools or methods for the Commission to use to determine significance.¹¹⁹ NEPA is not a means of "mandating that agencies achieve particular substantive environmental results";¹²⁰ rather, it is a procedural statute that "prescribes the necessary process."¹²¹ It

¹¹⁶ See *Alaska LNG*, 67 F.4th at 1188 ("The NGA 'sets out a general presumption favoring ... authorization.' *W. Va. Pub. Servs. Comm'n v. Dep't of Energy*, 681 F.2d 847, 856 (D.C. Cir. 1982). FERC's approval of the Project easily comports with the NGA. The Commission expressly concluded the Project was in the public interest because it would have substantial economic and commercial benefits, and these benefits were not outweighed by the projected environmental impacts.").

¹¹⁷ Rehearing Request at 31 (citing 40 C.F.R. § 1502.16(a)(1)).

¹¹⁸ See Authorization Order, 181 FERC ¶ 61,143 at PP 74-75 (citing Final EIS at 4-397 to 4-398).

¹¹⁹ *Infra* P 41.

¹²⁰ *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 371 (1989); accord *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989) ("[I]t is now well settled that NEPA itself does not mandate particular results, but simply prescribes the necessary process.") (*Methow Valley*).

¹²¹ *Oglala Sioux Tribe v. U.S. Nuclear Regulatory Comm'n*, 45 F.4th 291, 299 (D.C. Cir. 2022) ("NEPA is a purely procedural statute that 'does not mandate particular results, but simply prescribes the necessary process.'") (quoting *Methow*, 490 U.S. at 350); see also *Methow Valley*, 490 U.S. at 351 (1989) (explaining that "it would not have violated NEPA if the Forest Service, after complying with [NEPA's] procedural prerequisites, had decided that the benefits to be derived from downhill skiing at Sandy Butte justified the issuance of a special use permit, notwithstanding the loss of 15%, 50%, or even 100% of the mule deer herd" and also explaining that "[o]ther statutes may

is also worth noting that the D.C. Circuit recently affirmed the Commission's decision to not analyze the Social Cost of Carbon in its NEPA analysis,¹²² rejected the suggestion that it was required to do so, found that the petitioner's arguments "fare no better when framed as NGA challenges," and then, in the very same paragraph, sustained the Commission's public interest determination as "reasonable and lawful."¹²³

1. Direct Emissions

39. The Environmental Coalition argues that the Commission erred by not characterizing the significance of the project's GHG emissions.¹²⁴ It argues that the Commission is not absolved of making a significance determination on the grounds that the Interim GHG policy statement remains a draft and the Commission is conducting a separate proceeding to evaluate that policy.¹²⁵

40. For informational purposes, Commission staff estimated the social cost of GHGs associated with reasonably foreseeable emissions from the project.¹²⁶ While we have recognized in some past orders that social cost of GHGs may have utility in certain contexts such as rulemakings,¹²⁷ we have also found that calculating the social cost of GHGs does not enable the Commission to determine credibly whether the reasonably foreseeable GHG emissions associated with a project are significant or not significant in terms of their impact on global climate change.¹²⁸ Currently, however, there are no

impose substantive environmental obligations on federal agencies, but NEPA merely prohibits uninformed—rather than unwise—agency action").

¹²² *Alaska LNG*, 67 F.4th at 1184 ("Rather than use the social cost of carbon, the Commission compared the Project's direct emissions with existing Alaskan and nationwide emissions. It declined to apply the social cost of carbon for the same reasons it had given in a previous order. . . FERC's approach was reasonable and mirrors analysis we have previously upheld.").

¹²³ *Id.*

¹²⁴ Rehearing Request at 33-37.

¹²⁵ *Id.* at 33, 37.

¹²⁶ See Authorization Order 181 FERC ¶ 61,143 at P 75 (citing Final EIS at 4-397 to 4-398).

¹²⁷ *Fla. Se. Connection, LLC*, 164 FERC ¶ 61,099, at PP 35-37 (2018).

¹²⁸ See *Mountain Valley Pipeline, LLC*, 161 FERC ¶ 61,043, at P296, (2017), *aff'd sub nom.*, *Appalachian Voices v. FERC*, 2019 WL 847199 (D.C. Cir. 2019); *Del.*

criteria to identify what monetized values are significant for NEPA purposes, and we are currently unable to identify any such appropriate criteria.¹²⁹ Nor are we aware of any other currently scientifically accepted method that would enable the Commission to determine the significance of reasonably foreseeable GHG emissions.¹³⁰ The D.C.

Riverkeeper v. FERC, 45 F.4th 104, 111 (D.C. Cir. 2022). The social cost of GHGs tool merely converts GHG emissions estimates into a range of dollar-denominated figures; it does not, in itself, provide a mechanism or standard for judging “significance.”

¹²⁹ *Tenn. Gas Pipeline Co., L.L.C.*, 181 FERC ¶ 61,051 at P 37; *see also Mountain Valley Pipeline, LLC*, 161 FERC ¶ 61,043 at P 296, *order on reh’g*, 163 FERC ¶ 61,197, at PP 275-297 (2018), *aff’d*, *Appalachian Voices v. FERC*, 2019 WL 847199, at 2 (“[The Commission] gave several reasons why it believed petitioners’ preferred metric, the Social Cost of Carbon tool, is not an appropriate measure of project-level climate change impacts and their significance under NEPA or the Natural Gas Act. That is all that is required for NEPA purposes.”); *EarthReports*, 828 F.3d at 949, 956 (D.C. Cir. 2016) (accepting the Commission’s explanation why the social cost of carbon tool would not be appropriate or informative for project-specific review, including because “there are no established criteria identifying the monetized values that are to be considered significant for NEPA purposes”); *Tenn. Gas Pipeline Co., L.L.C.*, 180 FERC ¶ 61,205, at P 75 (2022); *See, e.g., LA Storage, LLC*, 182 FERC ¶ 61,026, at P 14 (2023); *Columbia Gulf Transmission, LLC*, 180 FERC ¶ 61,206, at P 91 (2022).

¹³⁰ *See, e.g., LA Storage, LLC*, 182 FERC ¶ 61,026, at P 14 (2023) (“there are currently no criteria to identify what monetized values are significant for NEPA purposes, and we are currently unable to identify any such appropriate criteria”). The Environmental Coalition asserts that “in this docket and others, the Commission has been presented with a number of sound options with which it could adopt and utilize to assess whether a project’s CO₂ emissions are significant.” Rehearing Request at 37 (citing Sierra Club et. al., DEIS Comments at 22-23; Motion for Leave and Supplemental Reply Comments of Natural Resources Defense Council, Accession No. 20220923-5190, Docket Nos. PL18-1-000, PL21-3-000 (September 23, 2022)). To the extent that the Environmental Coalition is attempting to submit an argument regarding options for assessing significance, we find that these “citation[s]” are “not sufficient to put FERC on notice, and it certainly does not amount to ‘set[ting] forth [the argument] specifically.’” *Alaska LNG*, 67 F.4th at 1184 (quoting 15 U.S.C. § 717r(a)) (citation omitted). Moreover, we address arguments pertaining to the social cost of GHGs in this order. *See, e.g.*, PP 40-41.

Circuit has repeatedly upheld the Commission's decisions not to use the social cost of carbon , including to assess significance.¹³¹

41. The Commission has disclosed the project's reasonably foreseeable GHG emissions in the Authorization Order.¹³² By adopting the analysis in the final EIS, we recognize that the project's contributions to GHG emissions globally contribute incrementally to future climate change impacts,¹³³ including impacts in the region.¹³⁴ We note that there currently are no accepted tools or methods for the Commission to use to determine significance, therefore the Commission is not herein characterizing these emissions as significant or insignificant.¹³⁵ Accordingly, we have taken the required "hard look" and have satisfied our obligations under NEPA.

2. Indirect Emissions

42. The Environmental Coalition argues that the Commission's approval of the Commonwealth LNG Project is a connected action with Commonwealth's pending application for DOE approval of non-FTA exports from the project.¹³⁶ It contends that

¹³¹ See, e.g., *EarthReports v. FERC*, 848 F.3d 949, 956 (D.C. Cir. 2016) (upholding the Commission's decision not to use the social cost of carbon tool due to a lack of standardized criteria or methodologies, among other things); *Del. Riverkeeper v. FERC*, 45 F.4th 104 (D.C. Cir. 2022) (also upholding the Commission's decision not to use the social cost of carbon); *Appalachian Voices v. FERC*, 2019 WL 847199 (same).

¹³² See Authorization Order, 181 FERC ¶ 61,143 at P 74.

¹³³ *Id.* P 75; Final EIS at 4-394.

¹³⁴ Final EIS at 4-393 – 4-394 (discussing observations from the Fourth Assessment Report).

¹³⁵ The February 18, 2022 Interim GHG Policy Statement, *Consideration of Greenhouse Gas Emissions in Nat. Gas Infrastructure Project Revs.*, 178 FERC ¶ 61,108 (2022), which proposed to establish a NEPA significance threshold of 100,000 tons per year of CO₂e as a matter of policy, has been suspended, and opened to further public comment. *Certification of New Interstate Gas Facilities*, 178 FERC ¶ 61,197, at P 2 (2022).

¹³⁶ Rehearing Request at 37-38. On April 17, 2020, DOE authorized Commonwealth to export 9.5 MTPA (1.21 Bcf/d) of LNG to nations with which the United States has a Free Trade Agreement (FTA) for a 25-year term. Commonwealth's application to export up to 9.5 MTPA of LNG to non-FTA nations is pending with DOE. Authorization Order, 181 FERC ¶ 61,143 at P 6.

application of the connected actions factors set forth at 40 C.F.R. § 1501.9 evince the connection between the Commission’s approval of the terminal and DOE’s consideration of Commonwealth’s proposed non-FTA exports.¹³⁷ Notwithstanding the D.C. Circuit’s decision in *Freeport*,¹³⁸ the Coalition claims that NEPA requires a single EIS for both Commonwealth’s NGA section 3 application and its DOE application for export to non-FTA nations, and the EIS must consider indirect emissions.¹³⁹ The Commission considered and rejected this argument in the Authorization Order¹⁴⁰ and, for the reasons stated below, we continue to reach the same result on rehearing.

43. Actions are “connected” for the purpose of NEPA review if they:

(1) automatically trigger other actions that may require environmental impact statements; (2) cannot or will not proceed unless other actions are taken previously or simultaneously; or (3) are interdependent parts of a larger action and depend on the larger action for their justification.¹⁴¹ An agency is required to consider “connected actions” in a single environmental document to prevent the agency from “dividing one project into multiple individual actions” with less significant environmental effects.¹⁴² The proposal before the Commission is to site, construct, and operate the Commonwealth LNG Project.¹⁴³ The export of natural gas from the Commonwealth LNG Project was

¹³⁷ *Id.* at 38-39 (citing 40 C.F.R. § 1509.1(e)(1)(i)-(iii) (2022)).

¹³⁸ *Freeport*, 827 F.3d 36.

¹³⁹ Rehearing Request at 38-40.

¹⁴⁰ See Authorization Order, 181 FERC ¶ 61,143 at PP 77-83.

¹⁴¹ 40 C.F.R. § 1501.9(e)(1)(i)-(iii) (2022).

¹⁴² *Myersville Citizens for a Rural Cmt., Inc. v. FERC*, 783 F.3d 1301, 1326 (D.C. Cir. 2015) (upholding the Commission’s determination that, although a Dominion-owned pipeline project’s excess capacity may be used to move gas to the Cove Point terminal for export, the projects are “unrelated” for purposes of NEPA) (citation omitted); see *City of W. Chicago, Ill. v. U.S. Nuclear Regul. Comm’n*, 701 F.2d 632, 650 (7th Cir. 1983) (“‘Piecemealing’ or ‘segmentation’ allows an agency to avoid the NEPA requirement that an EIS be prepared for all major federal action with significant environmental impacts by segmenting an overall plan into smaller parts involving action with less significant environmental effects.”) (citing *City of Rochester v. U.S. Postal Serv.*, 541 F.2d 967, 972 (2d Cir. 1976)); see also *Columbia Gulf Transmission, LLC*, 180 FERC ¶ 61,206, at PP 21, 83 (2022); *Tenn. Gas Pipeline Co., L.L.C.*, 180 FERC ¶ 61,205, at PP 30, 67 (2022).

¹⁴³ Authorization Order, 181 FERC ¶ 61,143 at P 82.

proposed before DOE, not the Commission. Therefore, because “[DOE], not the Commission, has [the] sole authority to license the export of any natural gas going through the [LNG] facilities,”¹⁴⁴ we disagree that any of the connected action factors apply in this case.¹⁴⁵

44. In any event, DOE has authorized the export of the project’s full production capacity to FTA countries such that the project’s entire production capacity may be statutorily deemed in the public interest.¹⁴⁶ For this reason, the criteria for determining whether the Commission’s proceeding is a connected action with DOE’s pending proceeding for additional export authorization to non-FTA countries are not satisfied. Specifically, because the export of natural gas to FTA countries is statutorily deemed “to be consistent with the public interest, and applications for such . . . shall be granted without modification or delay,”¹⁴⁷ and the full production capacity of the project is authorized for export to FTA countries, the project does not depend on obtaining the non-FTA authorization.¹⁴⁸ Accordingly, the Commission’s authorization of the project

¹⁴⁴ *Freeport*, 827 F.3d at 47 (“[T]he Commission’s NEPA analysis did not have to address the indirect effects of the anticipated *export* of natural gas.”) (discussing *Dep’t of Transp. v. Public Citizen*, 541 U.S. 752); see also *Alaska LNG*, 67 F.4th at 1185 (stating that the Commission’s “lack of jurisdiction over export approvals also means it has no NEPA obligation stemming from the effects of export-bound gas” and that the Commission is “forbidden to rely on the effects of gas exports as a justification for denying permission to an LNG project”) (cleaned up); *Columbia Gulf Transmission, LLC*, 180 FERC ¶ 61,206 at PP 21, 83; *Tenn. Gas Pipeline Co., L.L.C.*, 180 FERC ¶ 61,205 at PP 30, 67.

¹⁴⁵ The Environmental Coalition’s argument that NEPA’s “rule of reason” compels the consideration of the Commission and DOE actions in a single EIS similarly fails because the Commission and DOE are not segmenting an integrated project. Moreover, the Commission may not expand its jurisdiction by considering the indirect effects of actions beyond its delegated authority. *Alaska LNG*, 67 F.4th at 1185.

¹⁴⁶ See Authorization Order, 181 FERC ¶ 61,143 at PP 4, 6 (citing *Commonwealth LNG, LLC*, FE Docket No. 19-134-LNG, Order No. 4521 (Apr. 17, 2020)).

¹⁴⁷ 15 U.S.C. § 717b(c); see also *Sierra Club v. U.S. Dep’t of Energy*, 867 F.3d at 192-93 (distinguishing between the export of natural gas to FTA versus non-FTA nations for the purpose of whether an independent public interest determination is required by DOE, including compliance with NEPA); *Freeport*, 827 F.3d 36, 40-41 (same).

¹⁴⁸ In its rehearing request, the Environmental Coalition makes the unsupported statement that “the terminal will not proceed without a non-FTA authorization.”

does not automatically trigger another action that may require an environmental impact statement, there is no showing that the project cannot or will not proceed unless other actions are taken previously or simultaneously, and the project is not an interdependent part of a larger action that depends on the larger action for its justification.

45. Finally, the Environmental Coalition argues that *Freeport* was wrongly decided.¹⁴⁹ For the reasons detailed in the Authorization Order,¹⁵⁰ we summarily deny the Coalition's arguments.¹⁵¹ The Coalition acknowledges that the Commission cannot refuse to comply with judicial decisions with which it disagrees, but asserts that the Commission should advocate in this rehearing order that the D.C. Circuit clarify or overrule the decision.¹⁵² The Commission made clear in the Authorization Order, and we reiterate on rehearing, that we must act in accordance with the judicial precedent.¹⁵³

Rehearing Request at 39. As the Coalition provides no evidence for this claim, and since the Commission has not been delegated authority to approve or disapprove the import or export of natural gas, *see* Authorization Order, 181 FERC ¶ 61,134 at P 13 (citing *Alaska Gasline Dev. Corp.*, 171 FERC ¶ 61,134, at P 15 (2020)), we accord no weight to this assertion.

¹⁴⁹ Rehearing Request at 40-44.

¹⁵⁰ *See* Authorization Order, 181 FERC ¶ 61,143 at PP 77-81 (explaining that "the Commission need not consider the effects of upstream production or downstream transportation, consumption, or combustion of exported gas because the DOE's 'independent decision to allow exports . . . breaks the NEPA causal chain and absolves the Commission of responsibility to include [these considerations] in its NEPA analysis.'").

¹⁵¹ *See Penn East Pipeline Co., LLC*, 171 FERC ¶ 61,229, at PP 9-10 (2020).

¹⁵² *Id.* at 40, 42.

¹⁵³ *See* Authorization Order, 181 FERC ¶ 61,143 at P 78 n.205 ("The Environmental Coalition further argues that *Freeport* was wrongly decided. The Commission is not free to ignore controlling precedent, as the comments acknowledge, and declines to ask the D.C. Circuit to clarify or overrule *Freeport*. The Environmental Coalition also urges the Commission to include this information on a voluntary basis to provide important information to the public and to cooperating agency decisionmakers. We decline to do so.") (cleaned up).

D. Air Impacts and Environmental Justice

46. As discussed below, the Environmental Coalition raises several arguments in support of its position that the final EIS failed to properly evaluate the disproportionate adverse air quality impacts that the Commonwealth LNG Project would have in environmental justice communities. As discussed below, we agree with the Commission's findings in the Authorization Order, and those in the final EIS that the project would not cause or significantly contribute to a potential exceedance of the NAAQS and would not result in significant impacts on air quality in the region.

1. Significance of Air Pollution Impacts

47. The Environmental Coalition disputes the Commission's conclusion that the Commonwealth LNG Project would have less than significant air quality impacts in surrounding environmental justice communities.¹⁵⁴ The Coalition argues that the Commission's duty to identify and mitigate adverse impacts under NEPA is broader than under the Clean Air Act's (CAA) Prevention of Significant Deterioration (PSD) program.¹⁵⁵ The Coalition contends that the PSD program is concerned only with whether a new source will cause or contribute to any violation of the National Ambient Air Quality Standards (NAAQS) and that a permit may still be issued notwithstanding a potential NAAQS violation if the source's impacts are below the significant impact level. The Coalition states that under NEPA, however, the Commission "must evaluate all of the direct, indirect, and cumulative effects that project may have on environmental justice communities, even if the project's air emissions do not exceed the significant impact level at the precise time and location of any predicted NAAQS violation."¹⁵⁶ The Coalition argues that the final EIS failed to evaluate the cumulative impact of air pollution from the Commonwealth LNG Project on the surrounding areas.¹⁵⁷

48. This argument fails for multiple reasons. First, the D.C. Circuit has agreed with the Commission's use of NAAQS as a comparative metric in its NEPA analyses.¹⁵⁸ In *Sabal Trail*, the court stated that "[the Commission] appropriately relied on [the U.S.

¹⁵⁴ Rehearing Request at 46 (citing Authorization Order, 181 FERC ¶ 61,143 at P 63).

¹⁵⁵ Rehearing Request at 46; *see also* 42 U.S.C. § 7475.

¹⁵⁶ Rehearing Request at 47.

¹⁵⁷ *Id.* at 48.

¹⁵⁸ *See Sierra Club v. FERC*, 867 F.3d 1357, 1370 n.7 (D.C. Cir. 2017) (*Sabal Trail*).

Environmental Protection Agency's (EPA)] [NAAQS] as a standard of comparison for air-quality impacts," and "[b]y presenting the project's expected emissions levels and the NAAQS standards side-by-side, the EIS enabled decisionmakers and the public to meaningfully evaluate the project's air-pollution effects by reference to a generally accepted standard."¹⁵⁹ The Commission's comparison to the NAAQS, a generally-accepted standard established by EPA, for its analysis is entitled to deference.¹⁶⁰ By contrast, the Coalition fails to cite any authority for its assertion that NEPA's requirements cannot be satisfied by considering whether the projected emissions are in compliance with the NAAQS.

49. Second, the final EIS's cumulative dispersion modeling analysis included stationary source emissions from existing regional sources of air pollution permitted by the Louisiana Department of Environmental Quality's (Louisiana DEQ) within 50 kilometers of Commonwealth LNG.¹⁶¹ This analysis included Commonwealth's LNG Terminal stationary sources, consistent with PSD requirements for Louisiana DEQ permitting under the Clean Air Act, but also included the air quality impact of mobile sources such as LNG carriers and tug boats, going beyond PSD requirements.¹⁶² Based on the cumulative air pollutant dispersion modeling results, the EIS concludes that the project would not cause or contribute to an exceedance of the NAAQS, which are established to be protective of human health, and would not result in significant impacts on local or regional air quality.¹⁶³

50. Moreover, we disagree with the Coalition's assertion that the Commission failed to evaluate alternatives that could avoid or minimize the project's impacts.¹⁶⁴ In the final EIS, Commission staff evaluated eight alternative sites in addition to the proposed project location, all of which were screened to evaluate the feasibility and potential environmental advantage of each site.¹⁶⁵ Alternatives 1-3 were deemed infeasible and

¹⁵⁹ *Id.*

¹⁶⁰ See *id.* (citing *Cmtys. Against Runway Expansion, Inc. v. FAA*, 355 F.3d 678, 689 (D.C. Cir. 2004) ("The FAA's choice among reasonable analytical methodologies is entitled to deference from this court.")).

¹⁶¹ Final EIS at 4-228 through 4-232.

¹⁶² *Id.*

¹⁶³ *Id.*

¹⁶⁴ Rehearing Request at 46.

¹⁶⁵ Final EIS at 3-40.

thus not carried forward for additional consideration.¹⁶⁶ Commission staff determined that none of alternatives 4-8 would provide a significant environmental advantage to the proposed project location due, in part, to increased air emissions and impacts on environmental justice communities.¹⁶⁷ With respect to mitigation, the final EIS discussed a range of measures that Commonwealth would implement, including leak detection in compliance with all applicable legal requirements (e.g., the U.S. Department of Transportation’s Pipeline and Hazardous Materials Safety Administration’s codes and advisories and LDEQ air quality regulations).¹⁶⁸ Commonwealth is also continuing to assess additional measures to reduce fugitive emissions of methane and other volatile organic compounds that would be determined during final design of the terminal.¹⁶⁹

51. The Environmental Coalition next argues that even if the air pollution impacts resulting from the project do not exceed the significant impact level at the time and location of a NAAQS exceedance, that does not mean the direct and cumulative effects on human health will be insignificant.¹⁷⁰ Because the Environmental Coalition did not raise these arguments about significant impact levels prior to its rehearing request, the arguments are not properly before us and we reject them.¹⁷¹ In any event, the EIS

¹⁶⁶ *Id.* at 3-40—3-41.

¹⁶⁷ *Id.* at 3-41—3-45 (in addition to various other adverse environmental impacts (e.g., wetlands and habitat loss, increased dredging) the following alternatives suffered from the following defects relative to the proposed project location—Alternative 4: increased air impacts related to longer vessel transit, almost 75% of the pipeline route would be within environmental justice communities; Alternative 5: increased air impacts related to longer vessel transit, pipeline crossing through an environmental justice community; Alternative 6: increased air impacts related to longer vessel transit, pipeline crossing through an environmental justice community; Alternative 7: increased air impacts related to longer vessel transit, pipeline crossing through an environmental justice community; Alternative 8: increased air impacts related to longer vessel transit).

¹⁶⁸ Final EIS at 4-222—4-223 (providing more in-depth discussion of what these measures entail).

¹⁶⁹ *Id.* at 4-223.

¹⁷⁰ Rehearing Request at 48-49.

¹⁷¹ See, e.g., *Turlock Irrigation Dist.*, 175 FERC ¶ 61,144, at P 14 (2021) (rejecting petitioners’ argument because it was presented for the first time on rehearing, with no explanation for the delay, and “[t]he Commission looks with disfavor on parties raising issues for the first time on rehearing that could have been raised earlier, in part

acknowledges that both construction and operation of the project would result in impacts on air quality in the vicinity of the Project.¹⁷² The significant impact level for the one-hour nitrogen dioxide (NO₂) standard is 7.5 micrograms per cubic meter, which is just four percent of the NAAQS threshold (188 micrograms per cubic meter).¹⁷³ The project's highest contribution to any potential predicted NAAQS exceedance is less than 1.5% of the NAAQS.¹⁷⁴ In other words, existing industry and air pollutant emissions sources in the region are driving the potential predicted exceedances in the cumulative dispersion model. Accordingly, the Commission appropriately concluded in the Authorization Order that because Commonwealth's contribution to all exceedances is estimated to be less than the significant impact level at all exceedance locations, the project would not cause or significantly contribute to a potential exceedance of the NAAQS and would not result in significant impacts on air quality in the region, including to environmental justice communities.¹⁷⁵

52. The Coalition contends that reliance on the significant impact levels for NO₂ impacts is misplaced because there is no threshold below which respiratory health effects do not occur.¹⁷⁶ As previously stated, the EIS acknowledges that both construction and operation of the project would result in impacts on air quality in the vicinity of the Project.¹⁷⁷ The Coalition relatedly argues that NO₂ contributes to the formation of particulate matter and ozone for which EPA has found there are no zero-risk thresholds, and thus reliance on the significant impact levels for NO₂ is inappropriate because it fails to consider environmental justice communities' cumulative exposure to multiple pollutants.¹⁷⁸ The fact that the Coalition disagrees with EPA's use of significant impact levels and NAAQS for NO₂ impacts because they do not eliminate all risk is inapposite

because other parties are not permitted to respond to requests for rehearing"); *Vill. of Morrisville, Vt.*, 174 FERC ¶ 61,141, at P 18 (2021) (same).

¹⁷² Final EIS at 4-201.

¹⁷³ *Id.* at 4-227-430.

¹⁷⁴ See *id.* at app. H, Table H-2 (showing that the project's highest percent contribution to the cumulative concentration at a potential NAAQS exceedance receptor location is 1.4635%).

¹⁷⁵ See Authorization Order, 181 FERC ¶ 61,143 at P 63.

¹⁷⁶ Rehearing Request at 49.

¹⁷⁷ Final EIS at 4-201.

¹⁷⁸ *Id.* at 49-50.

for our purposes in this order.¹⁷⁹ EPA is the agency that is authorized to make those determinations and, as previously stated, the D.C. Circuit has held that the Commission satisfies its obligation to consider air quality impacts in the context of the effect on environmental justice communities when it considers emissions in the context of the NAAQS.¹⁸⁰ The final EIS details the source contribution analysis undertaken to determine whether the project would contribute significantly to a NAAQS exceedance.¹⁸¹ It found that the exceedances would still be predicted in the absence of the project, that the project would have only a minor impact and, therefore, that the project would not cause or contribute to the NAAQS exceedance.¹⁸² We concur with this analysis and disagree with the Coalition’s attempt to impose a more rigorous requirement on the Commission than is required by law.

53. The Coalition represents that “courts have rejected use of [significant impact levels] as a blanket exemption from the requirement to fully evaluate and mitigate harmful air pollution impacts.”¹⁸³ As a threshold matter, the discussion above, in the Authorization Order, and in the final EIS demonstrates that the Commission is not using significant impact levels (or anything else) as an exemption from conducting any required analysis. Moreover, three of the five cases cited in support—*United States v. Clintwood Elkhorn Mining Co.*,¹⁸⁴ *Consumer Electronics Ass’n v. FCC*,¹⁸⁵ and *Public Citizen v. Young*¹⁸⁶—do not even arise under the Clean Air Act. The remaining two, *Massachusetts*

¹⁷⁹ Rehearing Request at 49.

¹⁸⁰ See *supra* P 48 & note 158.

¹⁸¹ Final EIS at 4-231.

¹⁸² *Id.*

¹⁸³ Rehearing Request at 51.

¹⁸⁴ 553 U.S. 1 (2008) (interpreting the Internal Revenue Code in the context of a taxpayer seeking a refund for a tax assessed in violation of the Export Clause of the U.S. Constitution).

¹⁸⁵ 347 F.3d 291 (D.C. Cir. 2003) (challenge to action by the Federal Communications Commission under the All Channel Receiver Act).

¹⁸⁶ 831 F.2d 1108 (D.C. Cir. 1987) (challenge to action by the U.S. Food and Drug Administration under the Food, Drug, and Cosmetic Act).

*v. EPA*¹⁸⁷ and *Alabama Power Co. v. Costle*,¹⁸⁸ although arising under the Clean Air Act, are cited for propositions that have nothing to do with significant impact levels.

54. The Coalition contends that the Commission's determination that project emissions that are less than the significant impact level at all exceedance locations, would not cause or significantly contribute to a potential exceedance of the NAAQS is in violation of the D.C. Circuit Court's ruling in *Sierra Club v. EPA*,¹⁸⁹ in which the Coalition argues that the court vacated the EPA's use of significant impact levels regulation.¹⁹⁰ In *Sierra Club*, the court granted voluntary vacatur and remanded portions of an EPA rule that, among other things, codified a significant impact level for particulate matter less than 2.5 micrometers (PM_{2.5}).¹⁹¹ At issue in the relevant part of *Sierra Club* were two specific significant impact level provisions that EPA acknowledged were promulgated in excess of its authority because they automatically exempted applicable sources from the requirements of the Clean Air Act without affording permitting authorities discretion in applying the significant impact levels.¹⁹²

55. The Commission's analysis did not run afoul of the D.C. Circuit's limited holding in *Sierra Club*. Consistent with the EPA's position, the D.C. Circuit found that permitting authorities must have discretion to consider whether additional air quality analysis is required rather than allowing permitting authorities to automatically exempt sources with projected impacts below the significant impact levels.¹⁹³ The Commission

¹⁸⁷ 549 U.S. 497 (2007).

¹⁸⁸ 636 F.2d 323 (D.C. Cir. 1979).

¹⁸⁹ 705 F.3d 458 (D.C. Cir. 2013).

¹⁹⁰ Rehearing Request at 52.

¹⁹¹ *Sierra Club*, 705 F.3d at 466.

¹⁹² *Id.* at 464.

¹⁹³ *Id.* at 465; *see also id.* at 463-64 ("When the EPA responded to commenters in the final rule, it explained that notwithstanding the existence of a significant impact level, permitting authorities should determine when it may be appropriate to conclude that even a *de minimis* impact will cause or contribute to an air quality problem and to seek remedial action from the proposed new source or modification. But as the EPA acknowledges in its brief, 'the regulatory text it adopted does not allow permitting authorities the discretion to require a cumulative impact analysis, notwithstanding that the source's impact is below the significant impact level, where there is information that

does not issue Clean Air Act permits and thus any requirement for permitting agencies to consider whether extra analysis beyond that required in PSD permitting is warranted notwithstanding projected impacts being below the significant impact level is not within the Commission's purview. Commonwealth is required to obtain an Air Emissions Permit (Title V and Prevention of Significant Deterioration) from the Louisiana DEQ – Air Quality Division, which is the appropriate agency to make such a determination.¹⁹⁴ For the purpose of the Commission's NEPA analysis, Commission staff conducted a robust air modeling analysis, including impacts from mobile sources such as LNG carriers and tugs, which is additional to that which is required by the state.¹⁹⁵ The analysis showed that the project would not cause or significantly contribute to a potential exceedance of the NAAQS and would not result in significant impacts on air quality in the region.¹⁹⁶ We disagree that NEPA required anything more.

56. The Coalition contends that even if the significant impact levels were relevant to the Commission's inquiry, EPA has acknowledged (in PM_{2.5} PSD guidance) that significant impact levels may not be appropriate where modeling shows that an area is already exceeding the NAAQS.¹⁹⁷ In such cases, the Coalition argues, additional discretion may need to be exercised to ensure that public health is protected from pollution increases within the significant impact level.¹⁹⁸ The Commission is not a permitting authority under the Clean Air Act and thus the cited EPA guidance is inapposite for guiding the Commission's analysis under NEPA. Any air permitting requirements will be handled by Louisiana DEQ and Commonwealth will be required to comply with the permit's terms.¹⁹⁹

shows the proposed source would lead to a violation of the NAAQS or increments.””)
(cleaned up).

¹⁹⁴ See final EIS at 1-17. On March 28, 2023 Louisiana DEQ issued Commonwealth both a Part 70 Operating Permit and a Prevention of Significant Deterioration Permit. On April 27, 2023, Sierra Club petitioned the United States Court of Appeals for the Fifth Circuit for review of both permits.

¹⁹⁵ See Authorization Order, 181 FERC ¶ 61,143 at P 63.

¹⁹⁶ Final EIS at 4-198.

¹⁹⁷ Rehearing Request at 52.

¹⁹⁸ *Id.* at 52-53.

¹⁹⁹ See Authorization Order, 181 FERC ¶ 61,143 at app. A, envtl. condition 11.

57. The Coalition relatedly argues that any increase in NO₂ in environmental communities in and around Lake Charles where violations of the NAAQS are already violating or are projected to occur will make those violation harder to cure.²⁰⁰ We note that the project area is currently in attainment with the NAAQS.²⁰¹ We also emphasize that the dispersion modeling analysis is designed to be conservative and to over-state pollutant impacts from the Project and LDEQ emission inventory sources. We agree with the Commission's findings in the Authorization Order, and those in the final EIS that the project would not cause or significantly contribute to a potential exceedance of the NAAQS and would not result in significant impacts on air quality in the region. As Commonwealth's authorization is conditioned upon its compliance with all air permitting requirements, nothing further is required by the Commission.

2. Environmental Justice

58. The Environmental Coalition argues that the Commission should have provided additional analysis of health impacts to which environmental justice communities could be subjected in light of the Commonwealth LNG Project.²⁰² In support, the Coalition notes that the Commission acknowledged in the final EIS that NAAQS attainment alone may not alleviate all risk to environmental justice communities.²⁰³ The Authorization Order concludes, and we continue to agree, that overall, the construction and operational emissions from the proposed project would not have significant adverse air quality impacts in the project area, including minority or low-income populations.²⁰⁴

²⁰⁰ *Id.* at 53.

²⁰¹ See final EIS at 4-204. (“Cameron Parish, where the facility would operate and the transits occur, meets or exceeds the NAAQS for all criteria pollutants and is in attainment.”).

²⁰² Rehearing Request at 56.

²⁰³ *Id.* at 57 (citing final EIS at 4-198 (“Although the Project would be in compliance with the NAAQS and the NAAQS are designated to protect sensitive populations, we acknowledge that NAAQS attainment alone may not assure there is no localized harm to such populations due to project emissions of volatile organic compounds (VOC), hazardous air pollutants (HAP), as well as issues such as the presence of non-Project related pollution sources, local health risk factors, disease prevalence, and access (or lack thereof) to adequate care.”)).

²⁰⁴ See Authorization Order, 181 FERC ¶ 61,143 at P 63 (“Environmental justice communities in the study area would experience cumulative impacts on air quality; however, these impacts would be less than significant.”); see also *id.* P 71 (“With respect to whether impacts on environmental justice communities would be disproportionately high and adverse, we clarify that only cumulative impacts to visual resources would be

Accordingly, we reject the Coalition’s argument that the Authorization Order and final EIS should have provided additional analysis of health impacts.

59. The Environmental Coalition next argues that the project is contrary to the public interest because the significant visual impacts on an environmental justice community and overall cumulative impacts in the project area would result in disproportionately high and adverse impacts on environmental justice communities.²⁰⁵ The Coalition also takes issue with the thoroughness of the Commission’s environmental justice analysis.²⁰⁶

60. We disagree. In the final EIS, Commission staff thoroughly considered the visual impacts of the proposed project on environmental justice communities, ultimately concluding that the visual impacts of the project would have a permanent and significant adverse effect on those environmental justice communities near the project.²⁰⁷ The Commission subsequently adopted this conclusion in the Authorization Order.²⁰⁸ In doing so, the Commission satisfied its requirements under NEPA.²⁰⁹

predominately borne by environmental justice communities and thus disproportionately high and adverse. All other direct and cumulative impacts would not be disproportionately high and adverse.”).

²⁰⁵ Rehearing Request at 58 (citing final EIS at 5-415).

²⁰⁶ *Id.* at 59.

²⁰⁷ See final EIS at 4-195 (“While the direct visual changes would be outside the boundaries of the identified environmental justice communities, the permanent changes in the viewshed, would have a permanent and significant adverse effect on those environmental justice communities near the Project.”); *see also* Authorization Order, 181 FERC ¶ 61,143 at P 67 (“[D]aytime and nighttime visual renderings of the Commonwealth LNG terminal indicate that the facility and associated project lighting will be visible from environmental justice communities and up to distances of 10 miles from the terminal.”) (citing final EIS at app. E, fig. E-3, E-7, & E-8). For the full discussion of visual impacts, *see* final EIS § 4.8.4.

²⁰⁸ See Authorization Order, 181 FERC ¶ 61,143 at P 67 (“The final EIS concludes that while the direct visual changes would be outside the boundaries of the identified environmental justice communities, the permanent changes in the viewshed would have a permanent and significant adverse effect on those environmental justice communities near the project.”).

²⁰⁹ See *Methow Valley*, 490 U.S. at 350 (“[I]t is now well settled that NEPA itself does not mandate particular results, but simply prescribes the necessary process. If the adverse environmental effects of the proposed action are adequately identified and

61. We similarly disagree that the fact that the project's impacts on visual resources would have a permanent and significant adverse effect on environmental justice communities necessarily means that the project is inconsistent with the public interest under section 3 of the NGA. As discussed above and in the Authorization Order, NGA section 3 sets out a general presumption favoring authorization, the rebuttal of which requires an affirmative showing of inconsistency with the public interest.²¹⁰ Commonwealth's authorization is also conditioned upon its implementation of mitigation measures described in the Commonwealth Facility Lighting Plan, which would reduce visual impacts from facility lighting, as well as the requirement to augment the native vegetation by planting native trees approximately 30 feet inside Commonwealth's exclusion fence for approximately 150 feet on the upland chenier area (i.e., their typical landscape position).²¹¹ Accordingly, we continue to find that Commonwealth's proposal is not inconsistent with the public interest, notwithstanding the visual impacts on surrounding communities, including environmental justice communities.

E. Species

1. Bottlenose Dolphins

62. In the final EIS, Commission staff concluded that construction and operation of the project would result in temporary impacts on aquatic organisms, and that the operation of the project would result in minimal long-term impacts on aquatic organisms, including bottlenose dolphins.²¹² The Environmental Coalition argues that the

evaluated, the agency is not constrained by NEPA from deciding that other values outweigh the environmental costs.") (citations omitted); *see also Latin Americans for Soc. & Econ. Dev. v. Admin. of the Fed. Highway Admin.*, 756 F.3d 447, 477 (6th Cir. 2014) ("Just as [an agency] is not required to select an alternative with the least environmental impact under NEPA, [an agency] is not required to select an alternative with the least environmental justice impact. NEPA requires only that [an agency] consider the environmental impacts of its projects in making its decisions Environmental impacts and environmental justice issues are a consideration in agency decision making, but are not controlling.").

²¹⁰ See *supra* P 9; Authorization Order, 181 FERC ¶ 61,143 at P 14. In addition, NGA section 3(c) provides that the exportation of gas to FTA nations "shall be deemed to be consistent with the public interest," 15 U.S.C. § 717b(c), and Commonwealth has received authorization to export to FTA nations. *See* Authorization Order, 181 FERC ¶ 61,143 at P 6.

²¹¹ Authorization Order, 181 FERC ¶ 61,143 at P 72, envtl. condition 1.

²¹² Final EIS at 4-124.

Commission deprived the public of a meaningful opportunity to comment on the impacts to bottlenose dolphins by underestimating the radius area subject to disturbance at levels causing Level B harassment²¹³ under the Marine Mammal Protection Act (MMPA) and potential behavioral blockages.²¹⁴ With respect to impact pile-driving, the Coalition notes that the draft EIS estimated the radius of the ensonified area (the area where sound would travel) would range from 10 feet to 112 feet, but that the final EIS provided that the radius of the ensonified area would be from 961 feet to 3,821 feet.²¹⁵ The Coalition argues that the revised numbers mean that impact driving of the 54 and 96-inch diameter piles will ensonify the entire width of the shipping channel to sound levels causing Level B harassment and behavioral effects.²¹⁶ The Coalition states that the information in the draft EIS disguised the magnitude of the impacts to the bottlenose dolphins and deprived the public of a meaningful opportunity to comment on the Commission's conclusion regarding the significance of the impacts to the dolphins.²¹⁷

63. We disagree that the information published in the draft EIS deprived the public of a meaningful opportunity to comment. To the contrary, as the Environmental Coalition states in its rehearing request, Commission staff updated the radial estimates of the ensonified area from impact pile-driving in the final EIS in response to comments from members of the Coalition.²¹⁸ This is not evidence of a failure in the analysis, but rather Commission staff responded to a comment by members of the Coalition regarding the sufficiency of the analysis in the draft EIS and updated its analysis accordingly.²¹⁹

64. With respect to vibratory pile-driving, the Coalition asserts that the Commission both failed to provide information to estimate the area that would be ensonified to sound

²¹³ See 50 C.F.R. § 216.3 (2021) (“*Level B Harassment* means any act of pursuit, torment, or annoyance which has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but which does not have the potential to injure a marine mammal or marine mammal stock in the wild.”).

²¹⁴ Rehearing Request at 60.

²¹⁵ *Id.* at 60-61.

²¹⁶ *Id.* at 61-62.

²¹⁷ *Id.* at 62.

²¹⁸ See Rehearing Request at 60.

²¹⁹ Final EIS at 4-125; see final EIS vol. II at 124 (“Section 4.6.2 has been updated using the most recent NMFS Pile Driving Calculator tool.”).

levels constituting Level B harassment or behavioral impacts and an explanation as to why it could not provide such an estimate.²²⁰ The final EIS stated that it focused its discussion on the effects of impact pile driving because vibratory pile driving would produce lower levels (and smaller areas) of effects relative to an impact hammer.²²¹ This is further evidenced by the final EIS' recognition that vibratory pile-driving (versus impact pile-driving) is actually a "NMFS-recognized best management practice[]" for "reduc[ing] the extent of estimated underwater sound pressure levels produced by pile-driving."²²² In other words, because "using an impact hammer would potentially impact aquatic species over a larger distance than using a vibratory hammer,"²²³ the ensonification radii from vibratory pile-driving would be less than and subsumed by the ensonification radii for impact pile-driving.²²⁴

65. The Coalition disputes the sufficiency of the Commission's finding that Commonwealth will apply for an Incidental Harassment Authorization with NMFS prior to construction.²²⁵ The Coalition objects to the fact that the final EIS does not require Commonwealth to obtain an Incidental Harassment Authorization from NMFS, and questions whether NMFS could issue an Incidental Harassment Authorization given the low stock of Lake Calcasieu bottlenose dolphins without violating the small numbers limitation imposed by the MMPA.²²⁶ The Coalition also contends that the Commission needs to consider whether there is gap between the threshold NMFS applies in evaluating

²²⁰ Rehearing Request at 62.

²²¹ Final EIS at 4-123.

²²² *Id.* at ES-7 ("Commonwealth would use NMFS-recommended best management practices during pile driving to confirm protected species are not in the construction area (i.e., using biological monitors), allow mobile aquatic species to depart from the construction area, and reduce the extent of estimated underwater sound pressure levels produced by pile driving (e.g., using vibratory pile drivers when possible and using cushion blocks and bubble curtains when impact pile drivers are necessary) and reduce the potential for injury or behavioral level effects on aquatic species. Therefore, we conclude that underwater noise impacts on aquatic resources from pile driving would be localized, temporary, and not significant.").

²²³ *Id.* at 4-123.

²²⁴ The final EIS, therefore, contemplates the "worst case" scenario for the ensonification impacts of pile-driving.

²²⁵ Rehearing Request at 63.

²²⁶ *Id.* at 63-64; *see also id.* at 71-72.

whether an Incidental Harassment Authorization is required and whether it can issue the Incidental Harassment Authorization, and NEPA’s threshold for evaluating impacts.²²⁷

66. Environmental Condition 11 in the Authorization Order requires that Commonwealth “file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof)” before commencing construction.²²⁸ As an Incidental Harassment Authorization is required under the MMPA if the requisite criteria are met, Commonwealth is required to provide documentation of its Incidental Harassment Authorization (or evidence that an Incidental Harassment Authorization is not required) before commencing construction. Since Commonwealth has committed to consulting with NMFS to submit an application for an Incidental Harassment Authorization prior to commencing construction,²²⁹ nothing further is required by the MMPA in the context of this order.²³⁰ As to the Coalition’s question of whether NMFS could authorize “take” on these facts, NMFS is the agency authorized to consider and make that determination and we appropriately rely on its expertise to do so.²³¹ We similarly reject the Coalition’s unsupported argument that the

²²⁷ *Id.* at 64-65.

²²⁸ Authorization Order, 181 FERC ¶ 61,143 at app. A, envtl. condition 11.

²²⁹ See final EIS at 4-115.

²³⁰ See *Columbia Gulf Transmission, LLC*, 180 FERC ¶ 61,206 at P 71 (“Columbia Gulf will apply for and obtain an Incidental Harassment Authorization in the event that dolphins are observed entering the area in which the behavioral threshold will be exceeded during pile driving activities. In that scenario, Columbia Gulf committed to obtain the Incidental Harassment Authorization prior to initiating pile-driving activities within Barataria Bay and to file a copy of the authorization with the Commission. Columbia Gulf appropriately consulted with NMFS and relied on that agency’s expertise in selecting mitigation measures. Nothing more is required by the Marine Mammal Protection Act.”) (citations omitted).

²³¹ See, e.g., *EMR Network v. FCC*, 391 F.3d 269 (D.C. Cir. 2004) (finding that agency properly relied outside agency expertise); *Millennium Pipeline Co., LLC*, 161 FERC ¶ 61,229, at P 134 (2017) (“In carrying out its NEPA responsibilities, Commission staff relies on other agencies’ expertise....”); *Algonquin Gas Transmission, LLC*, 154 FERC ¶ 61,048, at P 203 (2016) (“[T]he Commission is entitled to rely on an agency’s expertise. The Commission’s capability to assess different types of environmental impacts, while extensive, is not infinite. Accordingly, we routinely rely on the expertise of other agencies to evaluate the environmental or safety impacts of proposed projects, provided we are satisfied as to their competence and the validity of their basic data and analysis.”); *Tenn. Gas Pipeline Co., L.L.C.*, 142 FERC ¶ 61,025,

Commission must analyze some unspecified gap between NMFS' threshold for issuing an Incidental Harassment Authorization and the Commission's NEPA analysis. As discussed in this section, the Commission met its NEPA obligations through its extensive analysis of impacts to bottlenose dolphins in the final EIS; that is separate and apart from any obligations NMFS must satisfy to issue an Incidental Harassment Authorization.

67. The Environmental Coalition disputes the Molnar study²³² on which the final EIS relies for the proposition that behavioral changes in response to pile-driving can be transient reflexes after which the animal returns to its normal behavior, arguing that study is about fish rather than marine mammals.²³³ The Coalition cites a different study stating that elevated levels of cortisol can have negative effects on dolphins when combined with other stressors including microorganism infection, prey scarcity, and competition,²³⁴ and argues that repeated exposure to impulse sounds over an extended period of time could result in such levels.²³⁵

68. Although the Molnar Study does not specifically address the effects of pile driving on marine mammals, it explicitly states that "the methods specified in this manual regarding the estimation of underwater sound pressure may potentially be used to assess the effects of pile driving sound on marine mammals."²³⁶ The Coalition does not address this statement in its rehearing request, nor does it provide any explanation (other than that the title of study says "fish") for its assertion that the information in the Molnar Study cannot apply to bottlenose dolphins. Moreover, for the dolphins' cortisol levels to be elevated to levels that are *potentially* problematic as described in the Coalition's

at P 66 (2013) ("We rely on other agencies to conduct certain studies because they are the resource agencies with expertise and responsibilities over the particular subject matters.").

²³² Melinda Molnar, David Buehler, Rick Oestman, James Reyeff, Keith Pommerenck, Bill Mitchell, Technical Guidance for Assessment of Hydroacoustic Effects of Pile Driving on Fish, Div. of Envtl. Analysis—Cal. Dep't of Transp. (2020) (Molnar Study).

²³³ Rehearing Request at 66.

²³⁴ *Id.* at 67 (citing Yang W-C, et al. (2021) Anthropogenic Sound Exposure-Induced Stress in Captive Dolphins and Implications for Cetacean Health. Front. Mar. Sci. 8:606736.doi: 10.3389/fmars.2021.606736 at 1, 5 (May 2021), <https://www.frontiersin.org/articles/10.3389/fmars.2021.606736/full.>) (Yang Study).

²³⁵ Rehearing Request at 68.

²³⁶ Molnar Study at 1-5.

submitted Yang Study,²³⁷ the dolphins would presumably need to remain in the ensonified area for extended periods of time for most or all of the pile driving process. In the final EIS, Commission staff found, and we agree, that marine mammals naturally tend to avoid in-water construction activities and would be able to leave the construction area, at minimum, during lulls in the pile driving²³⁸—decreasing the time periods for exposure that could lead to elevated cortisol levels.

69. The Coalition also disputes the sufficiency of the information in table 4.6.2-4 of the final EIS regarding the amount of time each day that impact pile-driving would occur, arguing that it shows only the total number of strikes per day, but not how much time the strikes will take.²³⁹ As the Environmental Coalition failed to raise this argument in its comments on the draft EIS despite information being available,²⁴⁰ it is not properly before us on rehearing. In any event, the final EIS concluded that “given the mitigation measures that Commonwealth would implement (e.g., soft starts, bubble curtains, and vibratory hammer) and the mobility of each of the species types, we conclude injury would be unlikely and behavioral disturbances would not be significant.”²⁴¹ Moreover, the Commission recognized in the final EIS that Commonwealth anticipates pile driving activities to require up to 37 days to complete.²⁴² Finally, as previously stated, Commonwealth will be required to provide the Commission with evidence of an Incidental Harassment Authorization (if required) in which NMFS would determine the extent of any take that may be authorized.

70. We also reject the Environmental Coalition’s argument that the final EIS fails to examine the impacts on dolphins from being behaviorally blocked from passage into or

²³⁷ Yang Study at 6 (“However, if cortisol levels persist elevated for extended period of time (exposure to high or cumulative noise levels for days to months), the high hormone levels can have negative effects on immune response, growth, and reproduction (Fair and Becker, 2000), causing the animal to potentially become more vulnerable when other stressors are present, such as microorganism infection, prey scarcity and competition.”) (emphasis added).

²³⁸ Final EIS at 4-123—4-124.

²³⁹ Rehearing Request at 68-69.

²⁴⁰ See draft EIS at 4-109 (including Table 4.6.2-4 with the same data as was reproduced in the final EIS).

²⁴¹ Final EIS at 4-124.

²⁴² *Id.* at 4-368.

out of the Gulf of Mexico for hours within a given day over a period of multiple days.²⁴³ To the contrary, the final EIS explicitly found that marine mammals would have to remain within approximately 200 feet of the pile driving location throughout a 12-hour period to suffer injury, but that injury would be “extremely unlikely to occur” given the species’ mobility and natural tendency to avoid in-water construction activities, and Commonwealth’s plan to use the soft-start technique when initiating pile driving.²⁴⁴ The final EIS also found that behavioral effects could exist within approximately 0.6 miles of the pile driving location, but that behavioral impacts would not be significant in light of the aforementioned mitigation measures that Commonwealth will implement.²⁴⁵ These data also contradict the Coalition’s unfounded argument that the final EIS does not examine what the length of the ensonified area would be to allow for an evaluation of the distance a dolphin may traverse during an ensonified period.²⁴⁶

71. The Environmental Coalition asserts that the final EIS fails to properly consider the cumulative effects of pile-driving at the proposed CP2 LNG facility located in Cameron Parish, Louisiana, which it argues could occur at the same time as pile-driving for the Commonwealth LNG Project.²⁴⁷ The Coalition relatedly argues that the final EIS did not respond to its comment that the size of the ensonified area for the proposed CP2 LNG facility may be underestimated.²⁴⁸

72. The final EIS extensively discusses the potential cumulative impacts of pile driving at the proposed CP2 LNG facility when combined with those of the Commonwealth LNG Project. We note that it is highly speculative whether the two projects would even have pile driving activities occurring at the same time. Commonwealth anticipates pile driving for the project to take only 37 days to complete,²⁴⁹ which means there would be only a small window of time where there would even be the potential for any overlap with pile driving for the proposed CP2 LNG facility. Even if there were cumulative impacts, the final EIS found, after extensive discussion of the potential combined impacts, that the mitigation measures to be adopted at both

²⁴³ Rehearing Request at 68-69.

²⁴⁴ Final EIS at 4-123.

²⁴⁵ *Id.*

²⁴⁶ Rehearing Request at 69.

²⁴⁷ *Id.* at 70.

²⁴⁸ *Id.*

²⁴⁹ Final EIS at 4-368.

projects would result in “impacts on aquatic species . . . [being] limited in geographic scope and readily avoidable by most species.”²⁵⁰ We agree with Commission staff’s conclusion in the final EIS. Finally, the Coalition’s argument with respect to the potential underestimation of the area disturbed by pile driving for the proposed CP2 LNG facility is unavailing, because it does not explain how this impacts the adequacy our analysis of the Commonwealth project. If the Coalition has concerns with the adequacy of the Commission’s review for the CP2 LNG facility, it should raise its concern in that docket.²⁵¹

2. Eastern Black Rail

73. The Environmental Coalition argues on rehearing that FWS’ biological opinion regarding potential impacts of the Commonwealth LNG Project on threatened eastern black rails is legally insufficient and that the Commission improperly relied on the flawed Biological Opinion in violation of the Endangered Species Act (ESA), NEPA and the Administrative Procedure Act (APA).²⁵² In the Authorization Order, the Commission explained that FWS found that the project would likely adversely affect, but is not likely to jeopardize the continued existence of the eastern black rail.²⁵³

a. Lawfulness of the Biological Opinion

74. On rehearing, the Environmental Coalition asserts that FWS’ biological opinion regarding potential impacts of the Commonwealth LNG Project on threatened eastern black rails fails to satisfy ESA requirements. Specifically, the Coalition argues the biological opinion: (1) fails to analyze the entire agency action; (2) fails to properly define the action area of the proposed project; (3) fails to include an accurate environmental baseline; (4) fails to adequately analyze the project’s direct, indirect, and cumulative effects; (5) relies on speculative mitigation measures; and (6) fails to adequately explain why the take of at least 30 individual rails will not jeopardize the continued existence of the species.²⁵⁴

75. As the Commission explained in the Authorization Order, “[i]n reviewing whether the Commission may appropriately rely on the Biological Opinion, the relevant inquiry is

²⁵⁰ *Id.*

²⁵¹ See CP22-21-000; CP22-22-000.

²⁵² Rehearing Request at 6, 73-108.

²⁵³ Authorization Order, 181 FERC ¶ 61,143 at P 36.

²⁵⁴ Rehearing Request at 77.

not whether the document is flawed, but rather whether the Commission’s reliance was arbitrary and capricious.”²⁵⁵ This reflects the judiciary’s recognition that Congress intended the action agency to defer to the determinations of the consultant agency based on Congress’ awareness that the latter is “far more knowledgeable than other federal agencies about the precise conditions that pose a threat to listed species, and that those expert agencies are in the best position to make discretionary factual determinations about whether a proposed agency action will create a problem for a listed species and what measures might be appropriate to protect the species.”²⁵⁶ Accordingly, while it is true that the action agency bears the ultimate responsibility for ensuring compliance with the ESA, the expertise of the consultant agency would be “seriously undermined” if the law required the action agency to undertake an independent analysis of the issues addressed in a biological opinion.²⁵⁷

76. The relevant inquiry for determining whether an action agency’s reliance on a biological opinion is arbitrary and capricious is not whether the conclusions in the biological opinion are based on faulty analyses, but whether the challenging party can point to “new” information that the consultant agency did not take into account when rendering its conclusions.²⁵⁸ Therefore, our analysis on rehearing is limited to whether

²⁵⁵ Authorization Order, 181 FERC ¶ 61,143 at P 38; *see also City of Tacoma, WA v. FERC*, 460 F.3d 53, 75 (2006) (“Accordingly, when we are reviewing the decision of an action agency to rely on a Biological Opinion, the focus of our review is quite different than when we are reviewing a Biological Opinion directly. In the former case, the critical question is whether the action agency’s reliance was arbitrary and capricious, not whether the Biological Opinion itself is somehow flawed.”).

²⁵⁶ *City of Tacoma*, 460 F.3d at 75 (citing *Bennett v. Spear*, 520 U.S. 154, 170 (1997)).

²⁵⁷ *Id.* at 75-76.

²⁵⁸ *See Shafer & Freeman Lakes Env'tl. Conservation Corp. v. FERC*, 992 F.3d 1071, 1093 (D.C. Cir. 2021) (“[T]he critical question is whether the action agency’s reliance was arbitrary and capricious, not whether the [Biological Opinion] itself is somehow flawed.’...The Commission ‘satisf[ies] its obligations under the [ESA] if a challenging party can point to no ‘new’ information—*i.e.*, information the [Service] did not take into account—which challenges the [Biological Opinion’s] conclusions.’” (quoting *City of Tacoma*, 460 F.3d at 75-76); *Pyramid Lake Paiute Tribe of Indians v. U.S. Dep’t of the Navy*, 898 F.2d 1410, 1415 (9th Cir. 1990) (“[E]ven when the [consultant agency’s] opinion is based on ‘admittedly weak’ information, another agency’s reliance on that opinion will satisfy its obligations under the [ESA] if a

the Environmental Coalition has identified any new information that FWS did not consider in rendering the Biological Opinion. As discussed below, we continue to find, as we did in the Authorization Order,²⁵⁹ that the Coalition has not identified any such information.

77. The Environmental Coalition first argues that FWS did not analyze the entire agency action because the Biological Opinion only considered the construction of the terminal and the associated pipelines rather than also considering the operation of the facility.²⁶⁰ We disagree. The Biological Opinion defines “the Action” as “the Commonwealth LNG Project” whose purpose is to “site, construct, and *operate* a natural gas liquefaction and export terminal and an integrated NGA Section 3 gas pipeline.”²⁶¹ The Biological Opinion explicitly states that “[g]eneral operations of the Commonwealth LNG [Project] are not anticipated to cause further harm to [eastern black rails] . . . after construction concludes.”²⁶²

78. The Environmental Coalition next asserts that the Biological Opinion does not properly define the “Action Area” of the proposed action, based on the purported exclusion of adjacent property west of the terminal.²⁶³ The Biological Opinion recognized that “the action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.”²⁶⁴ It included a 393-acre parcel of land west of the Calcasieu Ship Channel (of which only 118.8 acres will be used for construction of the terminal), the portion of land running north-northwest of the terminal site that is designated for the proposed 3.0-mile-long natural gas pipeline and associated infrastructure, and the waters within the Calcasieu Ship Channel where dredging is planned for construction of the proposed marine

challenging party can point to no ‘new’ information—*i.e.*, information the [consultant agency] did not take into account—which challenges the opinion’s conclusions.”).

²⁵⁹ See Authorization Order, 181 FERC ¶ 61,143 at P 38 (“Here, the alleged defects that the Environmental Coalition identifies do not rise to the level of new information that would cause the Commission to call into question the factual conclusions of FWS’s Biological Opinion.”).

²⁶⁰ Rehearing Request at 77.

²⁶¹ Biological Opinion at iii (emphasis added).

²⁶² *Id.* at 19.

²⁶³ Rehearing Request at 81.

²⁶⁴ Biological Opinion at 5 (citing 50 C.F.R. § 402.02 (2022)).

facility.²⁶⁵ FWS did not restrict its analysis to the 118.8 acre terminal site and we decline to second-guess FWS' judgment in determining the appropriate scope for analyzing potential indirect effects on the eastern black rail.

79. The Environmental Coalition argues that the Biological Opinion is based on an inaccurate environmental baseline, which refers to the condition of the eastern black rail in the action area without the consequences caused by the proposed action, based on the best available data.²⁶⁶ By the Coalition's own admission, this argument is largely predicated on the fact that it believes FWS arbitrarily narrowed the scope of the action area to only include the immediate project site.²⁶⁷ This argument is without merit, as we have already recognized that FWS considered the appropriate scope of the action area.

80. The Environmental Coalition next argues that the lack of a properly defined "agency action," "action area," and "environmental baseline" resulted in a deficient analysis of the direct, indirect, and cumulative effects on listed species.²⁶⁸ However, the Biological Opinion provides extensive discussion on the effects of the project on the eastern black rail.²⁶⁹ With respect to cumulative effects, the Biological Opinion also expressly states that "the [Commission] did not describe, and [FWS] is not aware of, any future non-Federal activities that are reasonably certain to occur within the action area. Therefore, we anticipate no cumulative effects that we must consider in formulating our opinion for the Action."²⁷⁰ The Coalition's attempt to bootstrap "44 past, present, and reasonably foreseeable projects"²⁷¹ from the final EIS' cumulative effects analysis is inapposite because the cumulative effects analysis in the final EIS is broader than the

²⁶⁵ *Id.* at 5-8.

²⁶⁶ Rehearing Request at 84.

²⁶⁷ *Id.* at 85-86 ("There is absolutely no discussion of the past and present impacts of all Federal, State, or private actions and other nearby activities, the anticipated impacts of the Project that have already undergone consultation, and the impact of non-Federal actions which are contemporaneous with the consultation in process . . . This is largely attributed to the fact that FWS has arbitrarily narrowed the scope of the action area to only include the immediate Project site, thus precluding any discussion of neighboring projects and their associated impacts.").

²⁶⁸ *Id.* at 87.

²⁶⁹ See Biological Opinion at 17-20.

²⁷⁰ *Id.* at 9.

²⁷¹ Rehearing Request at 88 (citing final EIS at 4-346–4-347).

cumulative effects analysis in the Biological Opinion.²⁷² The latter is concerned only with the cumulative effects on the eastern black rail in the action area, as defined in the Biological Opinion, whereas the scope of the cumulative effects analysis for the eastern black rail in the final EIS extends to the hydrologic unit code (HUC)-12 subwatershed.²⁷³ The referenced 44 projects were considered as part of Commission staff's HUC-12 subwatershed cumulative effects analysis.²⁷⁴

81. The Environmental Coalition argues that the Biological Opinion violates the ESA by relying on speculative mitigation measures to support its finding that the project will not jeopardize the continued existence of the eastern black rail.²⁷⁵ The Coalition does not offer any new information allegedly not considered by FWS, but rather disagrees with FWS' substantive conclusions.

82. The Environmental Coalition argues that the Biological Opinion fails to adequately explain why the take of 30 eastern black rails will not jeopardize the continued existence of the species. Again, the Coalition does not raise any new information not considered by FWS,²⁷⁶ but rather disputes the sufficiency of FWS' conclusion. Absent new information, we decline to depart from FWS' conclusions when it is well recognized that FWS is "in the best position to make discretionary factual

²⁷² See *Fund for Animals v. Hall*, 448 F.Supp.2d 127, at 136 (D.D.C. 2006) (providing the different definitions of "cumulative effects" under the two statutes after concluding that "the ESA Section 7 consultation process does not define cumulative impacts in the same way that NEPA does").

²⁷³ Final EIS at 4-344 (defining a HUC-12 sub-watershed as a "detailed hydrologic unit that can accept surface water directly from upstream drainage areas, and indirectly from associated surface areas such as remnant, noncontributing, and diversions to form a drainage area with single or multiple outlet points.")

²⁷⁴ *Id.*; see also *id.* at 4-377 (recognizing that other LNG projects in the HUC-12 subwatershed could also affect the eastern black rail).

²⁷⁵ Rehearing Request at 90.

²⁷⁶ See Biological Opinion at 22 ("Our analysis indicates that while the Action would have a negative effect on 30 [eastern black rails], such effects to a small portion of the Louisiana population would not be appreciable for the survival and recovery of the [eastern black rail].").

determinations about whether a proposed agency action will create a problem for a listed species and what measures might be appropriate to protect the species.”²⁷⁷

83. The foregoing demonstrates that the Biological Opinion considered each of the grounds raised by the Environmental Coalition and the Commission is, therefore, entitled to rely on FWS’ Biological Opinion. Whether the Coalition disputes FWS’ conclusion on any or all of these grounds is, according to *Pyramid Lake* and *City of Tacoma*, outside the scope of the Commission’s inquiry.

b. Eastern Black Rail NEPA Analysis

84. The Environmental Coalition also incorrectly claims that the final EIS is deficient under NEPA for its discussion of impacts to the eastern black rail. The Coalition raises a number of purported issues with Commission staff’s NEPA analysis of impacts to the eastern black rail including: (1) direct impacts to habitat; (2) indirect impacts from the noise and light generated from the project’s operations; and (3) various cumulative effects arguments.²⁷⁸

85. These arguments are largely based on the incorrect premise that the Commission should not have relied on the Biological Opinion.²⁷⁹ As established in the previous subsection, the Commission may rely on FWS’ determinations in the Biological Opinion absent new information that would call into question such conclusions. The Coalition’s arguments on this score thus fail at the outset, however we briefly address each below.

86. The Environmental Coalition notes the final EIS’s conclusion that the project would directly impact 33.6 acres of suitable eastern black rail habitat by permanently converting 30.8 acres of this habitat to industrial use and temporarily clearing 2.8 acres of habitat to construct the proposed exclusion buffer enclosure,²⁸⁰ and takes issue with the approach set forth in the final EIS that would have Commonwealth clear the habitat during the winter months when the fewest, least vulnerable individuals would be present, and otherwise attempt to “herd” eastern black rail individuals from the project area before

²⁷⁷ *City of Tacoma*, 460 F.3d at 75.

²⁷⁸ See generally Rehearing Request at 98-108.

²⁷⁹ Rehearing Request at 99 (“FERC has failed to engage in the requisite ‘hard look’ analysis and has instead, relied principally on an inadequate Biological Opinion to largely sidestep its obligations to rigorously examine the project’s significant impacts to the [eastern black rail].”).

²⁸⁰ *Id.* (referring to final EIS at 4-156).

clearing.²⁸¹ The Coalition argues that the final EIS does not discuss whether this approach, or the approach of flagging nests and relocating eggs, would be feasible or effective.²⁸² These methods are set forth as Reasonable and Prudent Measure 4 in the Biological Opinion and incorporated into the final EIS.²⁸³ FWS is in the best position to determine whether a proposed agency action will create a problem for a listed species and what measures might be appropriate to protect the species, and the Commission may rely on its conclusions.²⁸⁴

87. The Environmental Coalition also alleges that the Commission's analysis of indirect impacts in the final EIS is insufficient because it does not "discuss how noise and light generated resulting from the plant's operations will specifically impact eastern black rails that remain on site and in the buffer area."²⁸⁵ The Biological Opinion concludes that individual activities from the project that cause direct or indirect effects—including noise impacts and artificial lighting²⁸⁶—could result in harm to a maximum of 30 eastern black rails using the action area and authorizes the take of 30 eastern black rails. Based on this conclusion, FWS found that the project is not likely to jeopardize the continued existence of the eastern black rail.²⁸⁷ In other words, even if the project resulted in the maximum

²⁸¹ See final EIS at 4-156.

²⁸² Rehearing Request at 99-100.

²⁸³ See final EIS at 4-377 ("The FWS further provided the maximum number of individual eastern black rails the Project could take; reasonable and prudent measures for Commonwealth to follow to minimize take on eastern black rails; and monitoring and reporting requirements for Commonwealth to implement to monitor the impacts of incidental take of eastern black rails. Given the determination of the FWS and associated guidance, and that the other projects in the geographic scope would be required to follow the ESA Section 7 consultation process (and applicants would be required to follow the terms and conditions of any biological opinion), we conclude cumulative impacts on eastern black rails would not be significant.").

²⁸⁴ *City of Tacoma*, 460 F.3d at 75; see also *Annova LNG Common Infrastructure, LLC*, 170 FERC ¶ 61,140, at P 55 (2020) ("Because FWS is charged with implementing the ESA, it is the recognized expert regarding matters of listed species and their habitats, and the Commission may rely on its conclusions.").

²⁸⁵ Rehearing Request at 100.

²⁸⁶ Biological Opinion at 21.

²⁸⁷ *Id.* at 22-24.

projected take, it would be within bounds of what FWS determined would not likely jeopardize the eastern black rail's continued existence.

88. The Coalition's related argument that the final EIS fails to discuss secondary impacts to populations on adjacent properties is similarly unpersuasive. As recognized by the Coalition, the final EIS acknowledged that "noise related to construction and operation of the Project would likely result in indirect adverse effects on eastern black rails through potential displacement and/or behavior modification of individuals throughout 82.6 acres of eastern black rail habitat adjacent to the Project site."²⁸⁸ This conclusion reflects the extensive discussion in the Biological Opinion regarding the impacts from noise, light, and day-to-day operations on the displacement of eastern black rails to adjacent habitat areas.²⁸⁹ We disagree that anything further is required.

89. Finally, the Environmental Coalition disputes the sufficiency of the Commission's cumulative effects analysis for the eastern black rail. The Coalition raises several arguments, none of which we find persuasive.

90. The Coalition first argues that the Commission has not identified any past, present, and reasonably foreseeable actions, except for the CP2 LNG facility, that may cumulatively affect the eastern black rail.²⁹⁰ We find this argument without merit. The final EIS explains that the other LNG projects in the HUC-12 sub-watershed could also affect eastern black rail habitat, but that their respective EISs did not directly address impacts to eastern black rails because the eastern black rail was not a listed species when those EISs were developed.²⁹¹ The final EIS then uses public information from the CP2 LNG project—which indicates eastern black rail habitat may be present within the proposed project footprint but that the habitat is degraded and previously mowed to serve as cattle grazing land—coupled with FWS' determination that the project would not jeopardize the continued existence of the species, to draw the conclusion that cumulative impacts on eastern black rail would not be significant.²⁹² We disagree with the Coalition's suggestion that the Commission should have had additional discussions with

²⁸⁸ Final EIS at 4-156.

²⁸⁹ Biological Opinion at 18.

²⁹⁰ Rehearing Request at 104.

²⁹¹ Final EIS at 4-377.

²⁹² *Id.*

FWS.²⁹³ As previously discussed, the Commission undertook full ESA section 7 consultation with FWS, which resulted in FWS issuing the Biological Opinion concluding that the project would not jeopardize the continued existence of the eastern black rail and authorizing the take of up to 30 eastern black rails.²⁹⁴ As Commonwealth is obligated to adhere to the Incidental Take Statement issued by FWS and any new projects in the geographic area would need to commence separate section 7 consultation with FWS prior to proceeding with construction, we are satisfied that the Commission fully discharged its duties on this issue.

91. Second, the Coalition questions the scope of the Commission’s cumulative effects analysis, contending that the Commission did not explain why other projects identified in the EIS should not also be considered as part of the cumulative effects analysis for the eastern black rail. The final EIS used a watershed approach to delineate the geographic scope of the cumulative effects analysis for the eastern black rail,²⁹⁵ which is fully consistent with Commission practice and precedent.²⁹⁶ Moreover, the Commission is afforded significant discretion to establish reasonable geographic boundaries for its cumulative impacts analyses.²⁹⁷ This argument is, therefore, without merit.

²⁹³ See Rehearing Request at 105. This argument was not previously raised and is thus not appropriately in front of us on rehearing. See *supra* note 171.

²⁹⁴ Biological Opinion at 22-24.

²⁹⁵ Final EIS at 4-344; *see also id.* at 4-377 (recognizing that other LNG projects in the HUC-12 sub-watershed could also affect the eastern black rail).

²⁹⁶ See, e.g., *Fla. Se. Connection, LLC*, 163 FERC ¶ 61,158, at P 42 (2018) (“The EA uses different geographic scopes for different resources, correlated to the magnitude of the project-related impacts to those resources: within the same construction footprint as the project (for soils and land use), within the three Hydrologic Unit Code 12-digit watersheds crossed by the project (for water resources, vegetation and *wildlife, and protected species and habitats*), overlapping with known cultural features potentially within the Area of Potential Effect (for cultural resources), within 0.5 mile (for an historic architectural structure), and within 0.25 mile of active construction or within 0.5 mile of horizontal directional drilling operations (for air quality.”) (emphasis added); *Nat’l Fuel Gas Supply Corp.*, 162 FERC ¶ 61,239, at P 45 (2018) (“Commission staff identified HUC-12 watershed scale as the appropriate standard for this project with which to assess cumulative impacts on surface waters, wetlands, vegetation, and *wildlife*, as the watershed scale ‘provides a natural boundary and geographic proxy’ to assess impacts.”) (emphasis added).

²⁹⁷ See *Kleppe v. Sierra Club*, 427 U.S. 390, 414 (1976) (recognizing that the “identification of the geographic area within which [cumulative impacts] may occur, is a

92. The Coalition next argues the Commission did not provide information about any non-LNG projects that could affect eastern black rail habitat and that the Commission should have considered the impacts from other types of projects.²⁹⁸ Coalition's premise is incorrect. Although one sentence of the eastern black rail cumulative effects analysis in the final EIS references "other LNG projects in the HUC-12 watershed,"²⁹⁹ later in the paragraph Commission staff references "other projects," which includes more than just other LNG projects.³⁰⁰ These other projects are listed in Table 4.13-2 of the final EIS, which clearly shows that projects other than LNG projects were reviewed as potentially affecting listed species.³⁰¹

93. Fourth, the Coalition asserts that the Commission and FWS did not discuss how the effects of climate change may be exacerbated by the project and how sea level rise may affect eastern black rail habitat. To the extent this argument disputes the sufficiency of the Biological Opinion, this is not the appropriate forum to raise such an argument and we reiterate our previously-stated position that we are entitled to rely on a biological opinion issued by the expert agency charged with producing such a document.³⁰² With respect to the Commission's NEPA analysis, the final EIS provided extensive discussion on GHGs and climate change,³⁰³ but also recognized that, to date, "Commission staff have not identified a methodology to attribute discrete, quantifiable, physical effects on the environment resulting from the Project's incremental contribution to GHGs. Without the ability to determine discrete resource impacts, Commission staff are unable to assess the project's contribution to climate change through any objective analysis of physical

task assigned to the special competency of the appropriate agencies"); *Freeport*, 827 F.3d at 49 (same).

²⁹⁸ Rehearing Request at 105-06 ("Such projects could include residential, commercial, or industrial development projects, canal dredging projects, pipeline projects, and transportation projects.").

²⁹⁹ Final EIS at 4-377.

³⁰⁰ *Id.* ("Because the eastern black rail is now listed as Threatened, if the *other projects* in the geographic scope were to proceed with construction, they would need to consult with the FWS, per Section 7 of the ESA, to assess whether the projects would adversely affect eastern black rails.") (emphasis added).

³⁰¹ Final EIS at 4-348—4-357.

³⁰² See *supra* PP 75, 83.

³⁰³ See generally final EIS at §§ 4.11.1, 4-394—4-399.

impact attributable to the Project.”³⁰⁴ Accordingly, the Commission appropriately relied on the Biological Opinion’s conclusion that the project would not jeopardize the continued existence of the species without purporting to quantify the project’s nexus to sea level rise and any corresponding impacts to eastern black rail habitat.³⁰⁵

94. Finally, the Coalition erroneously suggests that the Commission is discounting the significance of the project’s cumulative effects by concluding that other projects that may affect the eastern black rail will be subsequently analyzed in future ESA section 7 consultations.³⁰⁶ Not so. The final EIS recognized that one component of the eastern black rail’s protection now that it is listed as a threatened species is that any other projects in the geographic scope that sought to undertake construction activities would need to consult with FWS,³⁰⁷ however, that is not the sole basis on which the Commission rested its cumulative impacts analysis. The conclusion that cumulative impacts on the eastern black rail would not be significant was also based on the Biological Opinion’s conclusion that the project would not jeopardize the continued existence of the species and limiting the amount of take to 30 eastern black rail.³⁰⁸ Since Commonwealth is obligated to adhere to the terms of the Biological Opinion, including the Incidental Take Statement, and other projects in the area would be required to comply with the section 7 consultation process, which would also take into account cumulative impacts on species, the Commission appropriately concluded that cumulative impacts would not be significant.

³⁰⁴ Final EIS at 4-396.

³⁰⁵ The final EIS does acknowledge that the project would contribute incrementally to future climate change impacts, final EIS at 4-387, 4-396, and discusses the effect of sea level rise on the project at various points throughout, *see* final EIS at app. K (listing the pages on which “sea level rise” is discussed).

³⁰⁶ Rehearing Request at 107.

³⁰⁷ Final EIS at 4-377.

³⁰⁸ *Id.*

The Commission orders:

In response to Sierra Club's request for rehearing, the Authorization Order is hereby modified and the result sustained, as discussed in the body of this order.

By the Commission. Commissioner Danly is concurring with a separate statement attached.

Commissioner Clements is dissenting with a separate statement attached.

(S E A L)

Debbie-Anne A. Reese,
Deputy Secretary.

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Commonwealth LNG, LLC

Docket No. CP19-502-002

(Issued June 9, 2023)

DANLY, Commissioner, *concurring*:

1. I agree with today's order and write separately for two reasons.
2. *First*, I draw to the reader's attention my separate statement to the underlying Authorization Order.¹ While I did not agree with the entirety of the Authorization Order, I agreed on the most important aspect of the order: the decision to grant Commonwealth LNG, LLC's Natural Gas Act (NGA)² authorization to site, construct, and operate a natural gas liquefaction and export facility, including an NGA section 3 natural gas pipeline, in Cameron Parish, Louisiana (Commonwealth LNG Project).³ In today's order, "the result [is] sustained"⁴—a decision with which I also agree.
3. *Second*, I wish to emphasize the standard under NGA section 3 which is that "[t]he Commission *shall* issue such order upon application, unless, after opportunity for hearing, it finds that the [proposal] will not be consistent with the public interest."⁵ In applying this standard, "[t]he NGA 'sets out a general presumption favoring . . . authorization.'"⁶ It therefore follows that, to overcome this presumption, such that the

¹ *Commonwealth LNG, LLC*, 181 FERC ¶ 61,143 (2022) (Authorization Order) (Danly, Comm'r, concurring in the judgment).

² See 15 U.S.C. § 717b.

³ *Commonwealth LNG, LLC*, 181 FERC ¶ 61,143 (Danly, Comm'r, concurring in the judgment at P 1).

⁴ *Commonwealth LNG, LLC*, 183 FERC ¶ 61,173, at Ordering Para. (2023).

⁵ 15 U.S.C. § 717b(a) (emphasis added).

⁶ *Ctr. for Biological Diversity v. FERC*, 67 F.4th 1176, 1188 (D.C. Cir. 2023) (quoting *W. Va. Pub. Servs. Comm'n v. Dep't of Energy*, 681 F.2d 847, 856 (D.C. Cir. 1982)); accord *Sierra Club v. United States Dep't of Energy*, 867 F.3d 189, 203 (D.C. Cir. 2017) (*Freeport*) ("We have construed this as containing a 'general presumption favoring . . . authorization.'") (citation omitted).

application is denied, “there must be ‘an affirmative showing of inconsistency with the public interest.’”⁷

4. The Supreme Court has explained that the inclusion of the term “public interest” in our statute is not “a broad license to promote the general public welfare”—instead, it “take[s] meaning from the purposes of the regulatory legislation.”⁸ As to the “meaning” and “purposes” of the NGA, the Supreme Court has instructed us in unambiguous terms that the purpose of the NGA is “to encourage the orderly development of plentiful supplies of . . . natural gas at reasonable prices.”⁹ Moreover, NGA section 3(c) provides that the exportation of gas to Free Trade Agreement nations “shall be deemed to be consistent with the public interest.”¹⁰ The Commission’s application of the foregoing is consistent with the NGA. Simply put, there has been no showing that the Commonwealth LNG Project will “not be consistent with the public interest.”¹¹ The Commission need not concoct complicated rubrics or analytical frameworks to arrive at its determinations; such acrobatics are unnecessary.

For these reasons, I respectfully concur.

James P. Danly
Commissioner

⁷ *Freeport*, 867 F.3d at 203.

⁸ *NAACP v. Fed. Power Comm'n*, 425 U.S. 662, 669 (1976) (*NAACP*).

⁹ *Id.* at 669-70 (citations omitted); *accord Myersville Citizens for a Rural Cnty. v. FERC*, 783 F.3d 1301, 1307 (D.C. Cir. 2015) (quoting *NAACP*, 425 U.S. at 669-70). I note that the Supreme Court has also recognized the Commission has authority to consider “other subsidiary purposes,” such as “conservation, environmental, and antitrust questions.” *NAACP*, 425 U.S. at 670 & n.6 (citations omitted). But all subsidiary purposes are, necessarily, subordinate to the statute’s primary purpose.

¹⁰ 15 U.S.C. § 717b(c).

¹¹ *Id.* § 717b(a).

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Commonwealth LNG, LLC

Docket No. CP19-502-002

(Issued June 9, 2023)

CLEMENTS, Commissioner, *dissenting*:

1. I dissent from this Order¹ for two principal reasons. First, the Order's discussion of how, if at all, the Commission considered the project's climate impacts in its public interest determination is incomprehensible. By speaking in code that only they can decipher, the majority violated the most basic requirement of the Administrative Procedure Act (APA) that an agency give a reasoned explanation for its decision. The majority also failed to respond to important arguments in the Environmental Coalition's rehearing request, which is yet another violation of the APA. Second, I cannot countenance the majority's refusal to seriously consider whether or how the Commission should assess the significance of greenhouse gas (GHG) emissions.²

2. The first reason for my dissent arises from the opaque language in paragraph 37 of the Order. The Environmental Coalition argues that the Commission is required to consider climate impacts in its public interest determination under section 3 of the NGA.³ If the Commission had done so, one would expect it to say as much in response. But the Order does not say the Commission considered climate impacts in its public interest determination. Instead, paragraph 37 says only that "the Commission's balancing under the public interest standard is consistent with the purpose of the NGA and is therefore

¹ Commonwealth LNG, LLC, 183 FERC ¶ 61,173 (2023) (Order).

² I have dissented from other recent orders for the same reason. See, e.g., Rio Grande LNG, LLC and Rio Bravo Pipeline Company, LLC, 183 FERC ¶ 61,046 (2023) (Clements, Comm'r, dissenting at PP 14-15); Texas LNG Brownsville LLC, 183 FERC ¶ 61,047 (2023) (Clements, Comm'r, dissenting at PP 14-15); Driftwood Pipeline LLC, 183 FERC ¶ 61,049 (2023) (Clements, Comm'r, dissenting at PP 2-3).

³ Rehearing Request at 31 ("FERC is ... required by NEPA and the NGA to consider the direct and cumulative effects on climate change in its public interest analysis....").

afforded deference.”⁴ In a footnote to this sentence, the Order cites the Supreme Court’s decision in *NAACP v. Fed. Power Comm’n*⁵, and includes a parenthetical explaining that the Court said “the purpose of the NGA is to ‘encourage the orderly development of plentiful supplies of . . . natural gas at reasonable prices’ and also observ[ed] that there are subsidiary purposes to the Act.” The parenthetical fails to mention that environmental protection is one of those subsidiary purposes. This cryptic section of the Order leaves the reader to wonder whether encouraging plentiful supplies of natural gas was the Commission’s driving consideration in its “balancing.” Did climate impacts factor into the public interest determination at all? If so, how? Neither the parties nor a reviewing court can discern from the Order whether the Commission even agrees that it must consider climate impacts and, if so, whether and how it weighed them in its public interest determination. In failing to explain its reasoning, the Commission violated the APA.⁶

3. To the extent paragraph 37 of the Order is meant to suggest the Commission is not required to consider the environmental impacts of the project’s GHG emissions in its public interest determination under section 3 of the NGA, it is plainly wrong. Nearly fifty years ago the Supreme Court held in *NAACP* that environmental protection is a purpose of the NGA.⁷ More recent decisions make clear that the Commission must consider the climate impacts of GHG emissions in its public interest determinations under the statute.⁸

⁴ Order at P 37 (citations omitted).

⁵ 425 U.S. 662, 669 (1976).

⁶ See, e.g., *SEC v. Chenery Corp.*, 318 U.S. 80, 94 (1943) (“[T]he orderly functioning of the process of review requires that the grounds upon which the administrative agency acted be clearly disclosed and adequately sustained.”); *Del. Riverkeeper Network v. FERC*, 753 F.3d 1304, 1313 (D.C. Cir. 2014) (quoting *Motor Vehicle Mfrs. Ass’n of the U.S., Inc. v State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983)) (“[A]n agency action will be set aside as arbitrary and capricious if it is not the product of ‘reasoned decisionmaking.’”).

⁷ 425 U.S. at 670 n.6.

⁸ See, e.g., *Vecinos para el Bienestar de la Comunidad Costera v. FERC*, 6 F.4th 1321, 1331 (D.C. Cir. 2021) (finding Commission’s analysis of climate change impacts deficient under both NGA and NEPA); *Birckhead v. FERC*, 925 F.3d 510, 519 (D.C. Cir. 2019) (in addressing arguments relating to GHG emissions, the court explains that the Commission’s public interest determination includes environmental considerations); *Sierra Club v. FERC*, 867 F.3d 1357, 1373 (D.C. Cir. 2017) (in addressing Commission’s treatment of GHG emissions, the court explains that the balancing of factors in

4. Like the NGA, the National Environmental Policy Act (NEPA) also requires the Commission to consider climate and other environmental impacts in deciding whether to approve a project application. As the Supreme Court has explained, NEPA's environmental impact statement requirement "ensures that the agency, *in reaching its decision*, will have available, and will carefully *consider*, detailed information concerning significant environmental impacts...."⁹ The Order's statement that the Commission's responsibilities under the NGA are "separate and distinct" from those under NEPA could be interpreted to suggest the statutes bear no relation to each other.¹⁰ To the contrary, the Commission's obligations under the two statutes are inextricably linked. In requiring the Commission to consider environmental impacts in its substantive decision-making, NEPA gives content to the NGA's broad "public interest" standard.¹¹

5. The second reason for my dissent centers on language in paragraphs 40 and 41 of the Order indicating the Commission has definitively concluded that it is impossible for it to assess the significance of GHG emissions. Although the Environmental Coalition's rehearing request did not expressly contend the Commission must use the Social Cost of GHGs protocol to assess significance, the Order gratuitously expounds on the purported unsuitability of the protocol, using the same language that appears in other recent orders.¹² The Order then proclaims that there is no other "currently scientifically accepted method that would enable the Commission to determine the significance of reasonably foreseeable GHG emissions."¹³ Yet, the Order does not substantively respond to the Environmental Coalition's argument that there *is* an alternative method available¹⁴

determining the public convenience and necessity includes environmental effects).

⁹ *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989) (emphasis added).

¹⁰ See Order at P 37.

¹¹ Cf. *Village of Barrington v. Surface Transp. Bd.*, 636 F.3d 650, 665-66 (D.C. Cir. 2011) (upholding agency's interpretation of "public interest" in its organic statute to include environmental considerations in light of NEPA's language and goals).

¹² Order at PP 40-41. For comparison, see *Rio Grande LNG, LLC and Rio Bravo Pipeline Company, LLC*, 183 FERC ¶ 61,046 at PP 92-93, 101; *Texas LNG Brownsville LLC*, 183 FERC ¶ 61,047 at PP 20, 25; *Driftwood Pipeline LLC*, 183 FERC ¶ 61,049 at PP 61, 63.

¹³ Id. at P 41.

¹⁴ The Environmental Coalition specifically points to a model for assessing significance that the Natural Resources Defense Council submitted for the Commission's

– one that has been sitting unaddressed in the Commission’s open docket for the GHG Policy Statement.¹⁵ This too violates the Administrative Procedure Act.¹⁶

6. In concentrating its fire on the Social Cost of GHGs protocol, the majority failed to provide a reasoned response to the Environmental Coalition’s key contention that the Commission violated a Council on Environmental Quality regulation requiring that an environmental impact statement include a discussion of “the environmental impacts of the proposed action and reasonable alternatives to the proposed action and the *significance* of those impacts.”¹⁷ Instead, the Commission merely states that it “disclosed and contextualized the reasonably foreseeable GHG emissions.”¹⁸ I agree with the Environmental Coalition that “to the extent that FERC actually attempted to substitute these analyses for a significance determination about the Project’s climate effects, it must so state, and failure to do so is arbitrary and capricious”¹⁹

7. Until the last few months, in other recent certificate orders, the Commission has explained that it is not determining the significance of GHG emissions because the issue of how to do so is under consideration in the docket for the Commission’s draft GHG Policy Statement.²⁰ This Order does not say that. Instead, it appears effectively to decide some of the central issues raised in the GHG Policy Statement docket.

8. I do not know whether the Social Cost of GHGs protocol or another tool can or should be used to determine significance. That is because the Commission has never seriously studied the answer to that question. Now, the majority has simply decided there

consideration on September 23, 2022. *See* Rehearing Request at 37 n.75.

¹⁵ Docket No. PL21-3.

¹⁶ *See New England Power Generators Ass’n, Inc. v. FERC*, 881 F.3d 202, 211 (D.C. Cir. 2018) (finding “that FERC did not engage in the reasoned decisionmaking required by the Administrative Procedure Act” because it “failed to respond to the substantial arguments put forward by Petitioners and failed to square its decision with its past precedent”).

¹⁷ Rehearing Request at 31 (citing and quoting 40 C.F.R. § 1502.16(a)(1)) (emphasis added).

¹⁸ Order at P 38.

¹⁹ Rehearing Request at 35 (citation omitted).

²⁰ *See, e.g., Transcon. Gas Pipe Line Co.*, 182 FERC ¶ 61,006, at P 73 & n.174 (2023); *Columbia Gas Transmission, LLC*, 182 FERC ¶ 61,171, at P 46 & n.93 (2023).

is no acceptable method, with no explanation of why the Commission departs from the approach so recently taken in other certificate orders.²¹ We have yet to address the voluminous record in the GHG Policy Statement docket, including comments that speak to the significance issue. As I have said before, the Commission should decide the important unresolved issues relating to our assessment of GHG emissions through careful deliberation in a generic proceeding with full transparency.

For these reasons, I respectfully dissent.

Allison Clements
Commissioner

²¹ To depart from prior precedent without explanation violates the Administrative Procedure Act. *See, e.g., West Deptford Energy, LLC v. FERC*, 766 F.3d 10, 17 (D.C. Cir. 2014) (“[T]he Commission cannot depart from [prior] rulings without providing a reasoned analysis.”) (citations omitted).

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Commonwealth LNG, LLC)
) Docket No. CP19-__-000
)

APPLICATION FOR AUTHORIZATION
UNDER SECTION 3 OF THE NATURAL GAS ACT

Pursuant to Section 3(a) of the Natural Gas Act (“NGA”),¹ and in accordance with Parts 153 and 380 of the regulations of the Federal Energy Regulatory Commission (“Commission” or “FERC”),² Commonwealth LNG, LLC (“Commonwealth”) hereby submits the instant application (“Application”) for authorization to site, construct, and operate a natural gas liquefaction and export facility (“LNG Facility”), including an NGA Section 3 natural gas pipeline (“Pipeline”), in Cameron Parish, Louisiana. The LNG Facility and Pipeline (together, the “Commonwealth LNG Project” or “Project”) will be located on the west side of the Calcasieu Ship Channel, near the entrance to the Gulf of Mexico.

Commonwealth respectfully requests that the Commission issue an order granting the authorization requested herein by no later than January 2021 to allow Commonwealth to commence commercial exports by the first quarter of 2024.

In support of this Application, Commonwealth states as follows:

¹ 15 U.S.C. § 717b(a) (2012).

² 18 C.F.R. Parts 153, 380 (2018).

I.
EXECUTIVE SUMMARY

The LNG Facility, which is proposed to be located on a 393-acre site in Cameron Parish, Louisiana, on the west side of the Calcasieu Ship Channel near its entrance to the Gulf of Mexico, will enable the liquefaction and export of U.S.-sourced natural gas to foreign markets. The Commonwealth LNG Project encompasses the construction of one liquefied natural gas (“LNG”) plant, which includes six liquefaction trains and appurtenant facilities. Each train will have a liquefaction design capacity of approximately 65.1 Billion cubic feet (“Bcf”) of natural gas per year (equivalent to approximately 1.4 million metric tonnes per annum [“MTPA”]) for a total nominal liquefaction and production capacity of 390.3 Bcf per year (equivalent to approximately 8.4 MTPA of LNG). Under optimal operating conditions the Project will have a peak capacity of up to 441.4 Bcf per year (equivalent to approximately 9.5 MTPA of LNG). The Project will also include six full-containment LNG storage tanks (each with a capacity of 40,000 cubic meters [“m³”]), one marine loading berth (capable of loading LNG carriers of up to a capacity of 216,000 m³), and a 3.04-mile long, 30-inch diameter natural gas Pipeline that will connect the LNG Facility with the existing interstate and intrastate pipeline systems of Kinetica Partners, LLC (“Kinetica”), and EnLink Bridgeline Holdings LP, (“Bridgeline”), respectively, for the purpose of supplying feed gas to the Project.

The Pipeline will deliver natural gas to the LNG Facility at the feed gas metering station where the gas will be measured before it is sent to the pre-treatment facilities. In this regard, each of the six liquefaction trains will include a dedicated feed gas pre-treatment module to remove impurities from the feed gas. Gas pre-treatment will consist of mercury removal, acid gas removal and dehydration. Removed heavy hydrocarbons will be trucked from the LNG Facility as a single condensate product.

Feed gas will supply the pre-treatment section of each train at approximately 650 pounds per square inch gauge (“psig”). Following pre-treatment, the natural gas will enter the liquefaction trains, which are designed to utilize the Air Products and Chemicals, Inc. Single Mixed Refrigerant (“SMR”) process. Once the feed gas is liquefied, it will be stored in one of the six full-containment LNG storage tanks until it is loaded onto LNG carriers for export. The LNG Facility will also include a single mooring berth. An average of up to three LNG vessels per week (156 vessels per year) are expected to call on the LNG Facility. Electrical power requirements for operation of the LNG Facility (estimated at approximately 120 megawatts) will be provided by a gas-fired on-site simple cycle electric power generation plant.

Pipeline construction will occur over a twelve-month period and is anticipated to commence between the first quarter of 2022 and the second quarter 2023. Construction of the LNG Facility will occur over a 36 to 38-month period and is projected to commence in early 2021. A barge dock will be located to the north of the ship berth and will be utilized for unloading equipment and materials from barges required for the construction of the LNG Facility. Once construction of the LNG Facility is complete, the dock will be utilized for the mooring of tugboats and small craft. Commonwealth intends to implement an off-site modular approach with regard to construction of significant portions of the liquefaction trains and LNG storage tanks. Modules will be designed and fabricated at the vendors’ existing facilities and transported to the site. This approach will shorten the overall construction schedule and reduce requirements for laydown areas and on-site construction workforce.

The Project facilities proposed herein will be constructed and operated in accordance with applicable federal, state and local laws, regulations and standards. Resource Reports 11 and 13, included as part of Exhibit F, set forth the Project’s design and safety systems.

Construction of the Project will create an average of 800 on-site engineering and construction jobs, with a peak of approximately 2,000 jobs. Construction and operation of the Project will represent a substantial capital investment in the state of Louisiana, resulting in the employment of a large workforce; use of a considerable amount of construction equipment; and a commitment of materials, supplies, and operations equipment. This substantial investment will result in widespread economic gains locally, regionally, and nationally.

As fully detailed in this Application, the Commonwealth LNG Project satisfies the requirements of NGA Section 3 and is not inconsistent with the public interest. The Project will provide significant public benefits through increased economic activity—including the creation of jobs and additional tax revenues. Moreover, the Project will help address the U.S. trade deficit by facilitating the export of LNG to overseas markets, which in turn, will provide a politically and economically stable and environmentally less intrusive source of fuel to the global energy market. Accordingly, Commonwealth respectfully requests that the Commission grant the authorization required to site, construct and operate the Project by no later than January 2021, so that exports from the Project may commence by the first quarter of 2024.

II. **INFORMATION REGARDING THE APPLICANT**

The exact legal name of Commonwealth is Commonwealth LNG, LLC. Commonwealth is a Texas limited liability company, with its primary place of business located at One Riverway, Suite 500, Houston, TX 77056, and is authorized to do business in the State of Louisiana.

Commonwealth is a wholly owned subsidiary of Commonwealth Projects, LLC, which is in turn wholly-owned by a private individual, Paul Varello. Commonwealth is not owned, in whole or in part, or subsidized, directly or indirectly, by any foreign government. Moreover, it is neither contractually committed to ownership nor subsidization by any foreign government entity.

III. **COMMUNICATIONS**

The persons to whom correspondence and communications concerning this Application should be directed and upon whom service is to be made are as follows:

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IV. **DESCRIPTION OF PROPOSAL**

Through this Application, Commonwealth requests authorization pursuant to Section 3 of the NGA to site, construct and operate the Commonwealth LNG Project, to liquefy domestic natural gas for export to foreign markets as LNG. The proposed Project facilities are listed below, and detailed information is provided in the Environmental Report (Exhibit F hereto).

A. Overview

The Project will include one LNG plant, comprised of six liquefaction trains, each with a design production capacity of approximately 65.1 Bcf per year (equivalent to 1.4 million MTPA); six LNG storage tanks (each with a capacity of 40,000 m³); one marine loading berth (capable of loading LNG carriers with a capacity ranging from 10,000 m³ to 216,000 m³); and a 3.04-mile long, 30-inch diameter Pipeline. Under optimal operating conditions the Project will have a peak capacity of up to 441.4 Bcf per year (equivalent to approximately 9.5 MTPA of LNG).

B. LNG Facility

The major components of the LNG Facility include the following:

Gas Metering

- An on-site metering station;
- A liquid separation, filtration, and feed gas analyzer; and
- Isolation and emergency shut-off systems.

Pretreatment Facility

- Six pretreatment modules (one per liquefaction train); and
- Six mercury guard bed, acid gas removal, and dehydration units (one per pretreatment module).

Liquefaction

- Six liquefaction trains; with each train including:
 - An approximately 60-megawatt gas turbine with mechanical drive;
 - A heavy hydrocarbon removal system;
 - A feed gas booster compressor;
 - Liquefaction and separator modules;
 - A refrigerant compressor package and air coolers; and
 - A refrigerant make-up system and storage.

LNG Storage

- Six 40,000 m³ (net capacity) full-containment LNG storage tanks;
- An earthen berm/dike providing tertiary containment for the tank farm;
- Two submersible cryogenic send-out pumps per tank; and
- A radiant heat deluge system.

Marine Facilities

- A single berthing dock with the capacity to service vessels from 10,000 m³ to 216,000 m³;
- Four 16-inch marine loading arms – three LNG liquid and one vapor return;
- A gangway and mooring system;
- A separate spill containment system; and

- A loadout control and operator shelter.

Utilities

- Potable water from existing municipal water supply system;
- Demineralized water for amine make-up;
- A plant and instrument air system;
- A Nitrogen system; and
- A hot oil system.

Electric Power

- A 180-megawatt simple cycle electric power generator for the LNG Facility auxiliary loads;
- An emergency power generator; and
- A back-up battery system for uninterrupted power supply.

Appurtenant Structures

- A guard house;
- An administration building and central control room;
- A maintenance building and warehouse;
- A truck loadout station for loading trucks with condensate;
- A dock loading operator building and marine facilities control;
- Operator shelters;
- Miscellaneous equipment enclosures and electrical rooms; and
- A firewater pump house.

Civil Works

- Site grading and placement of structural fill;
- Vehicular roadways, storm surge wall, piling and foundations;
- Site drainage and spill containment systems; and
- A sanitary sewer system.

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:

OEP/DG2E/Gas Branch 1
Commonwealth LNG, LLC
Commonwealth LNG Project
Docket No. CP19-502-000
§ 375.308(x)

October 2, 2019

VIA FERC Service

Lisa Tonery
Orrick, Herrington & Sutcliffe LLP
51 West 52nd Street
New York, New York 10019-6142

Re: Environmental Information Request

Dear Ms. Tonery:

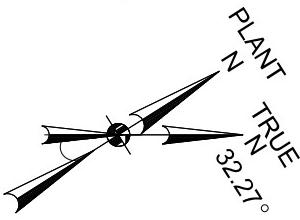
The information described in the enclosure is required for our analysis of the above-referenced application. **Please file a complete response within 20 days of the date of this letter.**

If certain information cannot be provided within this time frame, please indicate which items will be delayed and provide a projected filing date. **You should be aware that the information described in the enclosure is necessary for us to continue preparation of the Environmental Impact Statement (EIS). We will establish a schedule for completing the EIS based upon an expectation of timely and complete responses to our information requests.**

File your response in accordance with the provisions of the Commission's Rules of Practice and Procedure. In particular, 18 CFR 385.2005 requires all responses to be filed under oath by an authorized Commonwealth LNG, LLC representative, and 18 CFR 385.2010 (Rule 2010) requires service to each person whose name appears on the official service list for this proceeding.

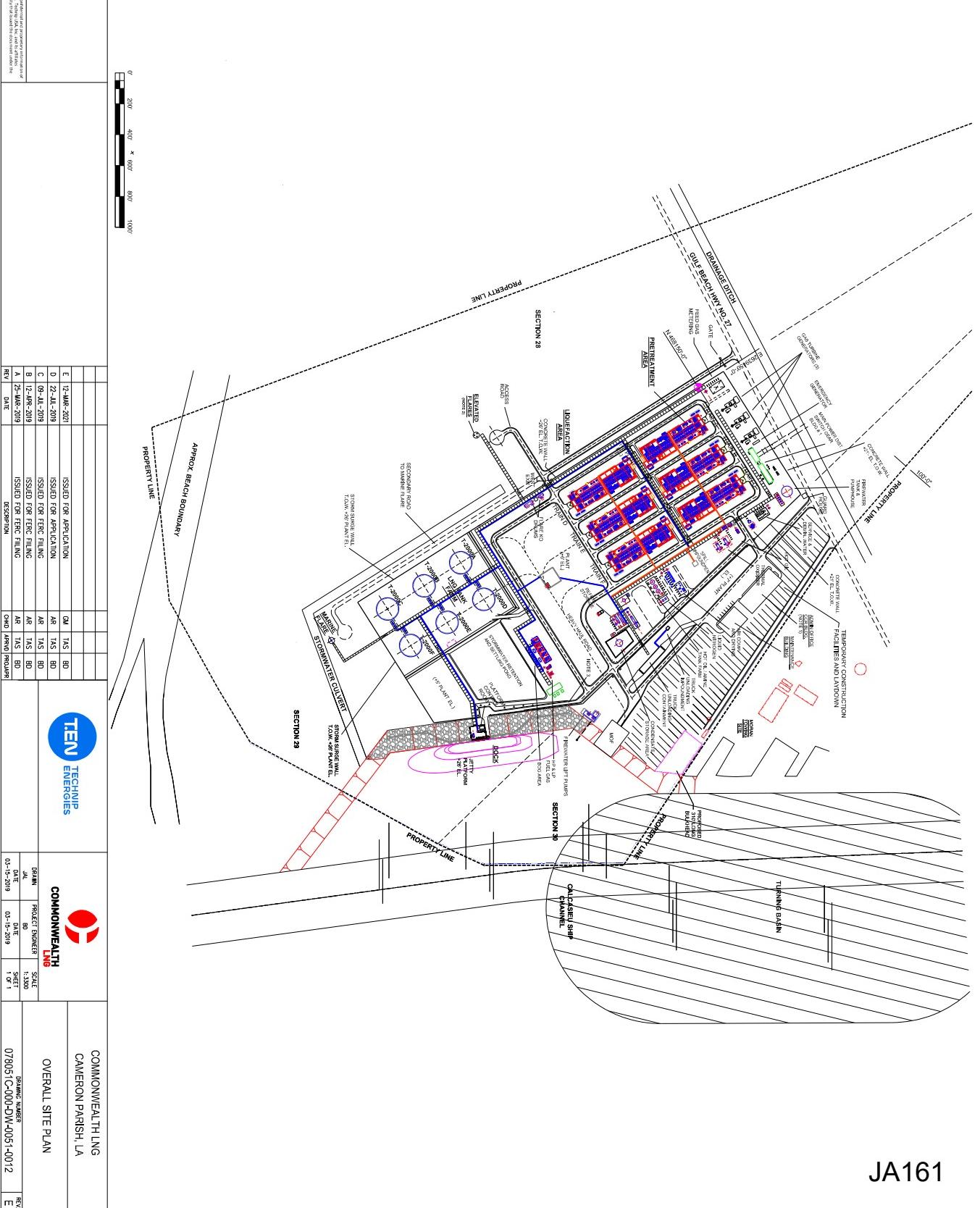
Electronic filing is encouraged using the Commission's eFiling system (see <http://www.ferc.gov/docs-filing/efiling.asp>). Be sure to prepare separate volumes, as outlined on the Commission's website at <http://www.ferc.gov/resources/guides/filing-guide/file-ceii.asp>, and label all controlled unclassified information (CUI) as described at

Document 100-1100000000000000



#23-1071 NOTES: ADMIN. BUILDING FLOOR TO BE SAME HEIGHT AS
TOP OF CONTAINMENT WALL. PARKING
UNDERNEATH BUILDING.

CONSTRUCTION IMPACTED AREA



UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Commonwealth LNG, LLC)
) Docket No. CP19-502-_____
)
)

**APPLICATION OF COMMONWEALTH LNG, LLC
FOR LIMITED AMENDMENT TO NGA SECTION 3 APPLICATION TO
MODIFY LNG STORAGE TANK DESIGN AND CAPACITY**

Pursuant to Section 3(a) of the Natural Gas Act (“NGA”)¹ and 18 C.F.R. Part 153, Commonwealth LNG, LLC (“Commonwealth”) hereby files this application seeking a limited amendment (“Limited Amendment”) to its August 20, 2019 application (“Application”) requesting authorization from the Federal Energy Regulatory Commission (“Commission” or “FERC”) under Section 3(a) of the NGA to site, construct, and operate a natural gas liquefaction and export facility (“LNG Facility”), including an NGA Section 3 natural gas pipeline (“Pipeline”), in Cameron Parish, Louisiana. As described in Commonwealth’s Application, the LNG Facility and Pipeline (together, the “Commonwealth LNG Project” or “Project” will be located on the west side of the Calcasieu Ship Channel, near the entrance to the Gulf of Mexico. The Project includes six full-containment LNG storage tanks (“LNG Storage Tanks”). Through this Limited Amendment, Commonwealth seeks Commission authorization to amend its Application to site, construct, and operate the LNG Facility, with the design and capacity modifications to the LNG Storage Tanks described herein. With these modifications, the LNG Storage Tanks will comply with the U.S. Pipeline and Hazardous Materials Safety Administration (“PHMSA”) regulations under 49 C.F.R. Part 193 and all applicable code requirements.

In support of this Limited Amendment, Commonwealth states as follows:

¹ 15 U.S.C. § 717b(a).

INFORMATION REGARDING THE APPLICANT

The exact legal name of Commonwealth is Commonwealth LNG, LLC. Commonwealth is a Texas limited liability company, with its primary place of business located at One Riverway, Suite 500, Houston, TX 77056, and is authorized to do business in the State of Louisiana.

Commonwealth is a wholly owned subsidiary of Commonwealth Projects, LLC, which is in turn wholly owned by a private individual, Paul Varello. Commonwealth is not owned, in whole or in part, or subsidized, directly or indirectly, by any foreign government. Moreover, it is neither contractually committed to ownership nor subsidization by any foreign government entity.

COMMUNICATIONS

The persons to whom correspondence and communications concerning this Limited Amendment should be directed and upon whom service is to be made are as follows:

Scott Ray
Hans Verswijver
Commonwealth Projects
One Riverway, Suite 500
Houston, TX 77056
Telephone: 346.352.4444
Email: sray@teamcpl.com
Email: hverswijver@teamcpl.com

Sandra E. Safro
David L. Wochner
K&L Gates LLP
1601 K Street, NW
Washington, D.C. 20006
Telephone: 202.778.9100
Email: sandra.safro@klgates.com
Email: david.wochner@klgates.com

BACKGROUND

Commonwealth filed its Application on August 20, 2019,² seeking FERC authorization to site, construct, and operate the Project, which included six (6) 40,000 cubic meter (m³) full-containment LNG Storage Tanks. The tank design provided in the Application specified both an inner and outer tank fabricated from nine percent (9%) nickel steel. Recognizing that this design would require special authorization from PHMSA, Commonwealth submitted an application to

² *Application of Commonwealth LNG, LLC for Authorization under Section 3 of the Natural Gas Act*, Dkt. No. CP19-502-000 (filed Aug. 20, 2019) (Accession Numbers 20190820-5125, 20190820-5126, and 20190820-5127).

PHMSA on June 9, 2020, under 49 C.F.R. § 190.341 seeking a Special Permit for the proposed tank design.

As indicated in its January 27, 2021 submission to FERC,³ Commonwealth has determined as a result of advanced engineering and further project development that modification of the LNG Storage Tank design is the most sensible path forward to ensure full compliance with existing regulations. More specifically, Commonwealth will proceed with a traditional full-containment, modular-built, tank design with a nine percent (9%) nickel inner tank and a concrete outer tank with carbon steel liner. This revised design is consistent with the alternative proposal that Commonwealth described in its July 6, 2020 responses to FERC Staff's June 5, 2020 data requests.⁴ Because the revised design for the LNG Storage Tanks will comply with all applicable code requirements, Commonwealth has withdrawn its PHMSA Special Permit application, as noted in Commonwealth's June 4, 2021 supplemental responses to FERC Staff's June 5, 2020 data requests.⁵

DESCRIPTION OF PROPOSAL

Commonwealth herein is seeking authorization pursuant to Section 3(a) of the NGA to modify its pending application in this docket specifically to site, construct, and operate the LNG Storage Tanks with the design and capacity modifications described herein. As noted above and provided in Commonwealth's June 4, 2021 supplemental responses to FERC Staff data requests,⁶ Commonwealth proposes to modify the LNG Storage Tank design to include a

³ Accession Number 20210127-5153.

⁴ Accession Number 20200706-5146.

⁵ See supplemental response to June 5, 2020 General data request number 1, filed on June 4, 2021, in Dkt. No. CP19-502-000 (Accession Numbers 20210604-5170, 20210604-5171, and 20210604-5172).

⁶ *Commonwealth LNG, LLC Responses and Supplemental Responses to January 2, 2020; February 11, 2020; June 5, 2020; July 30, 2020; and March 4, 2021 Data Requests under CP19-502-000*, Dkt. No. CP19-502-000 (filed June 4, 2021) (Accession Numbers 20210604-5170, 20210604-5171, and 20210604-5172) [hereinafter "June 4, 2021 Supplemental Filing"].

concrete outer tank with carbon steel liner instead of the previously proposed nine percent (9%) nickel steel.

The revised design will comply with all applicable code requirements, including 49 C.F.R. § 193.2161, and thus will not require a Special Permit from PHMSA. The LNG Storage Tanks will remain full-containment to NFPA 2001/2006 standards and there will be no change to the daily boil-off gas volume, the fill rate, the emptying rate, the design pressure, the operating pressure, the PSV set pressure, the VSV set pressure, or to the P&IDs. In addition, there will not be a substantial change in the LNG Facility layout.

Commonwealth also proposes to increase the net capacity of the LNG Storage Tanks from 40,000 m³ to 50,000 m³, for a total working storage volume of 300,000 m³. This includes a minor increase in the outer tank diameter from 40.0 m to 45.5 m and in the outer tank overall height from 50.4 m to 51.0 m. The foundation also would be modified from precast concrete pile to augured concrete pile. The tank center to center layout and plot plan location have not changed.

Commonwealth has provided to the Commission Staff substantial additional technical design and operational information related to this proposed modification in Commonwealth's June 4, 2021 responses and supplemental responses to FERC Staff's data requests.⁷ Commonwealth incorporates that information herein by reference.

In light of the limited nature of the modifications proposed in this Limited Amendment, Commonwealth respectfully requests a shortened intervention and comment period of twenty (20) days, limited in scope to the modifications described herein.

⁷ *Id.*

UNITED STATES OF AMERICA
DEPARTMENT OF ENERGY
FEDERAL ENERGY REGULATORY COMMISSION

IN THE MATTER OF
Commonwealth LNG LLC

)
)
)

Docket No. CP19-502-001

Protest of Center for Biological Diversity, Healthy Gulf, Louisiana Environmental Action Network, Louisiana Bucket Brigade, Port Arthur Community Action Network, Sierra Club, Restore Explicit Symmetry To Our Ravaged Earth, and Turtle Island Restoration Network

Commonwealth LNG, LLC (“Commonwealth”) requests authorization, under section 3 of the Natural Gas Act, to construct and operate a liquefied natural gas (“LNG”) export facility with a nominal capacity of 390.3 billion cubic feet per year (“bcf/y”) on a greenfield site at the mouth of the Calcasieu Ship Channel, together with an associated 3-mile supply pipeline.¹ This application, as amended, should be denied.²

¹ Commonwealth seeks approval of this pipeline as an export facility under section 3 of the Natural Gas Act, rather than as a pipeline engaged in interstate service under section 7 of the Act.

² This proceeding is in the early stages. FERC has not yet issued a draft environmental impact statement, although FERC has appropriately committed to doing so. Notice of Schedule for Environmental Review, <https://elibrary.ferc.gov/eLibrary/filedownload?fileid=15380122>, as modified by <https://elibrary.ferc.gov/eLibrary/filedownload?fileid=15484542>; see also 18 C.F.R. § 380.6(a)(1). Moreover, as FERC has acknowledged, development of project design details is in the early stages, and much has changed since the original application was submitted. See Environmental Information Request, Accession 20210716-3022. Accordingly, it is appropriate for the undersigned to raise issues regarding all environmental impacts of the proposed project, and not merely issues specific to the proposed amendment to the application.

Approval of *any* additional LNG export infrastructure is contrary to the public interest.

Additional infrastructure likely represents an overbuild. As of April 20, 2021, FERC has already approved LNG export facilities providing 43.608 bcf/d of capacity.³ This far exceeds the volume of exports that the Energy Information Administration predicts will ultimately be supported by global markets.⁴ Commonwealth has not provided any evidence of market support for this particular project. Absent market support, the project cannot provide public benefits to offset the harm to the public and the environment that will result from project construction. Nor does the project provide meaningful benefit to the public if it merely poaches demand that would have otherwise gone to other, also-constructed projects. *See Env. Def. Fund v. FERC*, 2 F.4th 953, 973 (D.C. Cir. 2021) (holding that FERC had failed to demonstrate pipeline was required by the public convenience and necessity where, principally, pipeline was not needed to serve any “new load demand.”).

On the other hand, even if there *were* market support for additional LNG export infrastructure, such facilities would still be contrary to the public interest. Responding to catastrophic climate change requires the U.S. and the globe to transition away from fossil fuels as quickly as possible. Long-lived, carbon-intense infrastructure like LNG exports is irreconcilable with this goal. When reviewing proposed projects under section 3 of the Natural Gas Act, FERC cannot defer public interest analysis entirely to the Department of Energy, especially as the Department has disclaimed authority to consider export-induced gas production and other effects

³ <https://cms.ferc.gov/media/north-american-lng-export-terminals-existing-approved-not-yet-built-and-proposed-1>.

⁴ <https://www.eia.gov/outlooks/aoe/data/browser/#/?id=13-AEO2021&cases=ref2021&sourcekey=0> (attached as Exhibit A).

occurring “upstream” of delivery of LNG to an export carrier. *See* Department of Energy, Final Rule: National Environmental Policy Act Implementing Procedures, 85 Fed. Reg. 78,197-01, 78,198, 78,201 (Dec. 4, 2020). Commonwealth agrees that FERC should consider the impact of its proposed project on global greenhouse gas emissions in deciding whether to approve the proposed terminal. Amendment Application at 5-6, Accession No. 20210708-5004. FERC cannot consider Commonwealth’s asserted indirect or lifecycle benefits without considering corresponding harms.

Finally, even if *some* additional export project could be shown to be in the public interest, *this* project is not. Commonwealth’s goal is to minimize “capital costs”⁵ so that it can compete as a “low-cost”⁶ source of LNG. *Accord* Resource Report 1-4, Accession No. 20210629-5230 (explaining that a design was chosen to “reduce construction costs.”). Commonwealth’s design choices may provide economic benefit to Commonwealth and its potential customers, but they impose adverse effects on the environment and the public that FERC must consider. For example, the “AP-SMR” liquefaction design Commonwealth proposes to use is, by the manufacturer’s admission, significantly less efficient than other designs that would be suitable for a project of Commonwealth’s scale.⁷

For these reasons, explained in further detail below and which the undersigned will further address during the NEPA process, FERC should deny Commonwealth’s application and the amendment thereto.

⁵ <https://commonwealthlng.com/the-project/> (attached as Exhibit B).

⁶ <https://commonwealthlng.com/company> (attached as Exhibit C).

⁷ <https://www.airproducts.com/-/media/airproducts/files/en/230/230-17-012-glb-sep20-mid-scale-lng-capabilities.pdf> at 4 (attached as Exhibit D).

A. Commonwealth's Amendment to the Application Has Not Explained or Justified an Increase in Storage Tank Capacity

In the amendment application, Commonwealth seeks to increase the capacity of the proposed six LNG storage tanks from 40,000 to 50,000 cubic meters each. Amendment Application at 4, Accession 20210708-5004. Commonwealth does not explain why it is seeking this change. Absent any showing as to why an increase in overall storage capacity is warranted, FERC should limit Commonwealth to five, rather than six, LNG storage tanks: with the new 50,000 cubic meter capacity, this would still provide more storage than Commonwealth originally proposed, while allowing Commonwealth to reduce the overall facility footprint and scale of construction impacts.

Commonwealth's initial application had stated that "The 40,000 m³ tanks are the largest aboveground storage tanks that can be assembled offsite and then transported by ocean-going barge." Resource Report 10-40. Commonwealth has not explained what has changed—e.g., whether, when, or why 50,000 m³ tanks can be manufactured now despite Commonwealth's prior assertion that it would be impossible to do so. More broadly, the fact that Commonwealth has quickly abandoned its prior contention about the limits of engineering possibility or technical feasibility on this issue casts a shadow over Commonwealth's assertions regarding infeasibility of other potential alternatives, such as electric transmission.

Regardless, now that Commonwealth has determined that 50,000 m³ tanks are available and feasible here, Commonwealth should be required to reduce the total number of tanks from six to five. Commonwealth's initial application determined that the project would be viable with 240,000 m³ of storage capacity. Five 50,000 m³ tanks would provide 250,000 m³. The amendment application seeks an increase in tank size but does not assert that Commonwealth has

determined that an increase in total storage capacity is necessary, or even beneficial to, the project purpose.

On the other hand, if FERC is inclined to consider approving the increase in storage capacity, FERC must evaluate whether this increase will contribute to an increase in output beyond the stated 390.3 bcf/y, as explained *infra*.

B. Commonwealth States that “The Purpose of the Project Is to Liquefy Up to 441.4 bcf” per year, and FERC Must Base Its Analysis on the Maximum Potential Facility Output

Authorizations for LNG export infrastructure should “reflect the maximum or peak capacity at optimal conditions as such a level represents the actual potential production of LNG.” *Sabine Pass Liquefaction, LLC*, 146 FERC ¶ 61117, P12 (Feb. 20, 2014). Here, FERC’s NEPA and Natural Gas Act reviews must consider the impacts of exporting 441.4 bcf/y, or 9.5 MTPA, of LNG, rather than the 390.3 bcf/y or 8.4 MTPA for which Commonwealth has requested authorization.

As FERC is aware, many—if not most—LNG export facilities have sought to increase their output relative to their initial applications. This demonstrates that, rather than seeking authorization for the “maximum” or “optimal” output, as required by *Sabine Pass*, applicants have routinely low-balled facility capacity, confident that they would be able to seek increases in authorization later. This practice leads to understating potential impacts, such as from LNG tanker traffic, during the analysis phase, in violation of NEPA, FERC precedent, and principles of administrative law.

Here, Commonwealth’s application materials indicate that Commonwealth actually expects to produce more than 390.3 bcf/y of LNG. Commonwealth has requested Department of Energy authorization to export 441.6 bcf/y (1.21 bcf/day) of LNG. Commonwealth’s Resource

being less efficient increases environmental impacts. However, Air Products contends that the AP-C3MR process is suitable for a facility of Commonwealth's site: both for individual trains of Commonwealth's proposed 1.4 MTPA capacity,⁹ and for facilities with total capacity in Commonwealth's proposed 8.4 to 9.5 MTPA range.¹⁰

Commonwealth's arguments for rejecting "large-scale LNG trains" like the C3MR process do not demonstrate that these trains are infeasible or that rejecting them would be consistent with the public interest. Commonwealth suggests that larger trains need a bigger footprint, Resource Report 10-42, but Commonwealth provides no information to support this conclusion, especially not on a per-MTPA basis (i.e., whether, instead of using six small trains, Commonwealth could use fewer, larger trains to achieve the same output without increasing total facility footprint). Nor has Commonwealth offered any explanation as to how or why "[l]arge-scale LNG trains are inconsistent with Commonwealth's market-based objectives, in particular with providing customers the opportunity to subscribe to shorter-term contracts at a lower MTPA commitment, made possible by Commonwealth's modular approach." RR10-10. Even if Commonwealth can provide some argument as to why small-scale trains are essential to its purpose (which must be more than that Commonwealth stands to make greater profit if its capital costs are lower), NEPA will still require FERC to rigorously explore the environmental impact of using a cheaper, more modular design in lieu of a larger and more efficient facility.

In addition, FERC must consider the alternative of powering liquefaction trains using electricity, rather than mechanically with gas turbines. The proposed AP-SMR liquefaction trains

⁹ *Id.*

¹⁰ <https://www.airproducts.com/-/media/airproducts/files/en/230/230-17-004-glb-feb21-lng-large-plant-capabilities-ds-42346.pdf> at 3 (attached as Exhibit E).

can be electrically driven,¹¹ as can C3MR trains and other designs. Electrically-driven trains decrease direct emissions, and often decrease total emissions even when indirect effects associated with electricity generation are accounted for. This is especially so on the multi-decade timeframes at issue for LNG facilities, as electric grids are expected to become cleaner in the future, whereas emissions from gas-fired liquefaction units will likely remain effectively unchained. As we explain below, Commonwealth has not demonstrated that constructing additional electric transmission to this site (or to potential alternative sites) would be infeasible.

F. Alternatives to Proposed On-Site Electric Generating Units

Commonwealth states that it expects on-site electric needs to amount to roughly 120 megawatts, which Commonwealth proposes to supply with two 60-megawatt simple cycle gas turbine electric generating units (plus a third unit installed as a spare). Application at 7, Accession 20190820-5125. Commonwealth has not justified using on-site electric generation instead of the grid, using simple-cycle units instead of more efficient combined cycle units, or placing these units at the terminal site instead of at a nearby location that may reduce impacts.

On the first issue, using the grid for electric power, instead of onsite, gas-fired electric generation, is likely to reduce environmental impacts. The electric grid is trending toward increased use of renewable generation, which means that during the life of the project, emissions from a grid-tied alternative would likely decrease, whereas emissions from on-site electric generating units would presumably remain constant. Nonetheless, Commonwealth rejects a grid tied alternative based on the unsupported assertion that using grid power “would compromise reliability of the LNG Facility to an unacceptable extent.” Resource Report 10-39, Accession

¹¹ <https://www.airproducts.com/-/media/airproducts/files/en/ln/g/bigger-is-not-always-better-lng-article.pdf> at page 3 (attached as Exhibit F).

20190820-5125. Commonwealth worries that during tropical storms, an electric supply line would be at risk of damage. *Id.* This speculation is not a sufficient basis for rejecting an alternative. A hard look would require:

- Identifying how common storms capable of disrupting electric transmission lines are likely to be, informed, at a minimum, by some discussion of how often such disruptions have occurred in the area in the past and by reasoned explanation of whether and how the frequency or intensity of such storms may change in the future.
- Identifying whether a storm that disrupts electric supply would in fact be likely to disrupt terminal operation, or whether terminal operation would need to halt during storms capable of disrupting electric transmission lines anyway.
- Addressing whether other LNG terminals in the area have determined that relying on the grid for electric power is reasonable, and if so, explaining why Commonwealth's divergence is justified.

Even if Commonwealth demonstrates that relying on the grid for electric power would have some impact on reliability, NEPA and the Natural Gas Act require FERC to evaluate and balance this tradeoff. If relying on the grid for electric power would, for example, lead to an additional 20 days of downtime over the requested 20+year life of the project, while decreasing net emissions by millions of tons, this tradeoff may be in the public interest despite not being Commonwealth's preference. And while Commonwealth is correct to note that construction of a new transmission line would have additional environmental impacts, the point of NEPA is to rigorously explore the benefits and drawbacks of the tradeoffs between alternatives.

In the alternative, if dedicated electric generating units are used, FERC must explore an alternative that used combined cycle units in lieu of the proposed simple cycle units. It appears that Commonwealth expects the facility, like most LNG terminals, to have a relatively constant electric load. For constant loads, combined cycle units are generally more efficient than simple cycle units, and thereby have lower emissions per unit of electricity generated, whereas less expensive simple cycle units are more commonly used for peaking and other intermittent

facilities. Combined cycle units are used for similarly sized electric generating units in the Gulf region, including an 82 megawatt plant at the Formosa Plastics facility in East Baton Rouge County, Louisiana (consisting of two 38 MW turbines and a 12 MW steam unit)¹² and a 96.7 megawatt plant in Freeport, Texas.¹³ FERC must explore whether a combined cycle unit here could meet project needs while reducing emission levels and other environmental impacts. Combined cycle units are generally more expensive than simple cycle, and Commonwealth may argue that combined cycle generation would be inconsistent with its goal of keeping capital costs low. But, as explained above, the fact that polluting is cheap is not a justification for exposing the public to be additional air pollution.

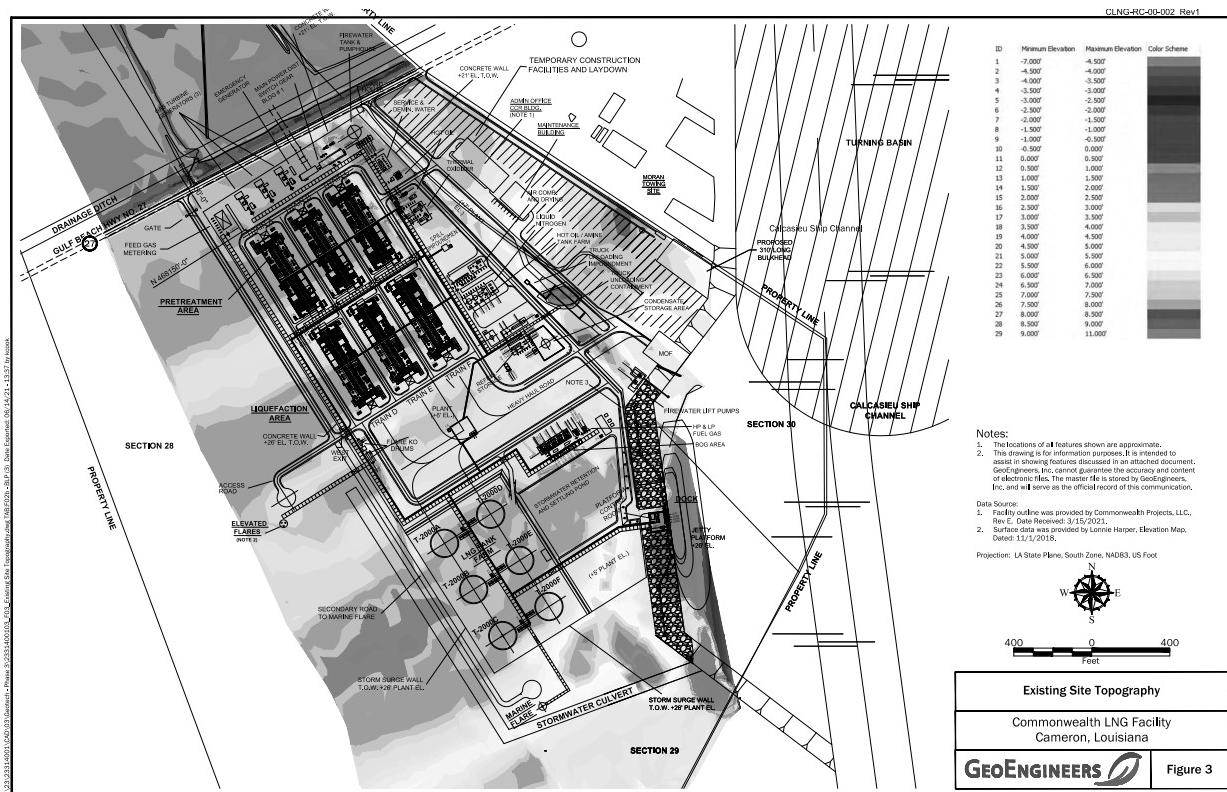
Finally, if dedicated generating units are used, then FERC must explore whether environmental impacts could be reduced by locating these units away from the terminal site, independent of whether these units are simple or combined cycle. The majority of the proposed site consists of wetlands, including the location of the proposed electric generating units, on the northwest border (adjacent to highway 27/82). Even if Commonwealth demonstrates that a 30-mile electric transmission line, sufficient to enable the site to run on grid power, is infeasible, a shorter transmission line may be sufficiently reliable.

¹² See, e.g.,

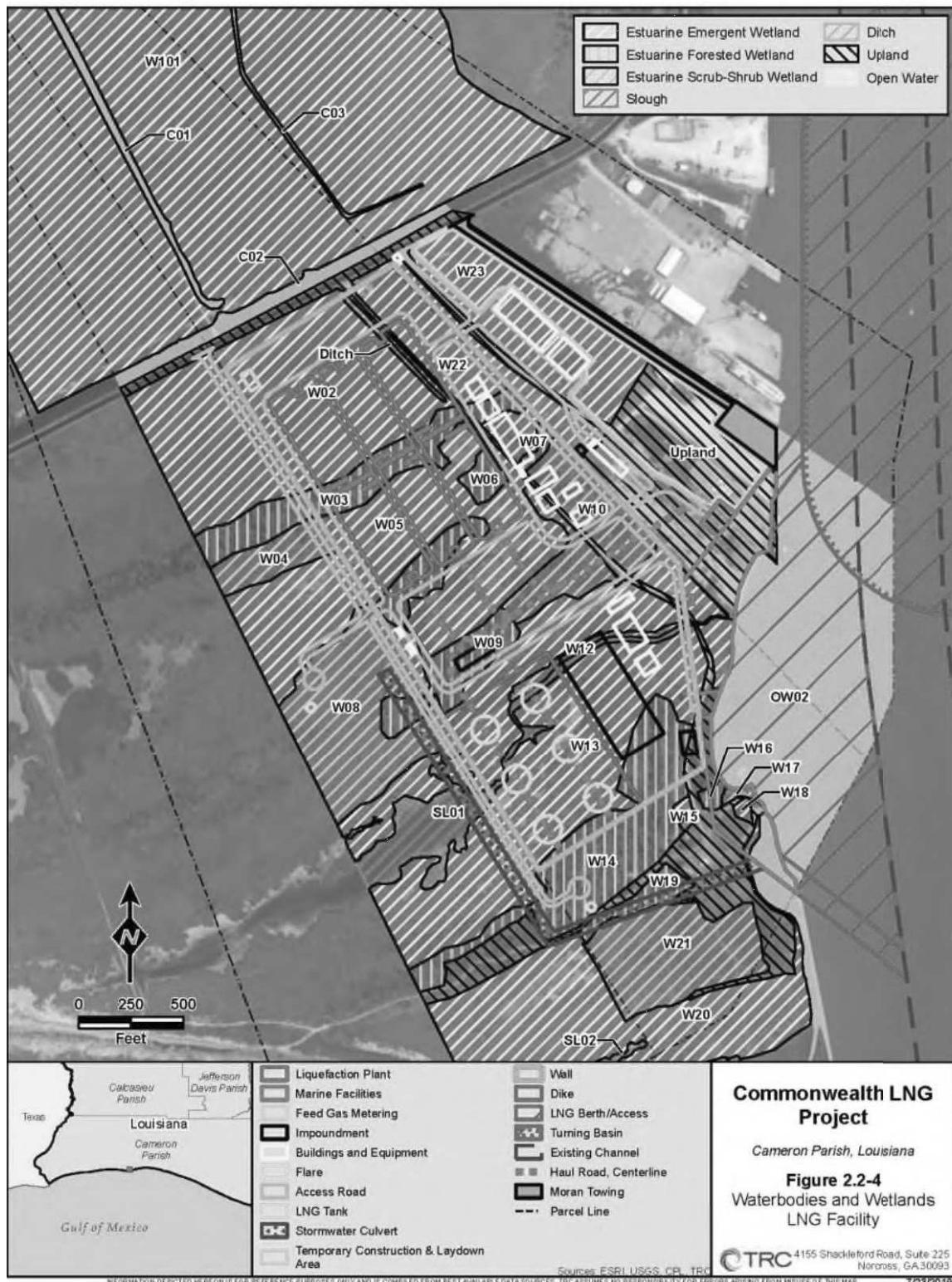
https://platform.marketintelligence.spglobal.com/web/client?auth=inherit#powerplant/powerplant_profile?id=13227.

¹³ See, e.g.,

https://platform.marketintelligence.spglobal.com/web/client?auth=inherit#powerplant/powerplant_profile?id=3226 and <http://globalenergyobservatory.org/geoid/2257>.



Accession 20210714-5122 Figure 3.



Resource Report 2-22, Accession 20190820-5125 (note that proposed electric generating units not included on this map).

Protest of Center for Biological Diversity, Healthy Gulf, LEAN, Louisiana Bucket Brigade, PACAN, Sierra Club, and RESTORE in Commonwealth LNG, CP19-502

Page 15 of 23
August 3, 2021

JA176

G. FERC Must Evaluate Carbon Capture

Commonwealth estimates that operation of the proposed facility will emit 3,375,890 tons of carbon dioxide equivalent (CO₂e) per year. Resource Report 9-30, Accession 20190820-5125. FERC must evaluate whether carbon capture and sequestration can be used to reduce some or all of these emissions. Numerous other LNG export facilities in the region have proposed or are exploring this possibility, including Cheniere's Sabine Pass and Corpus Christi facilities, Sempra's Cameron LNG terminal, and Venture Global's Calcasieu Pass terminal. FERC must require a similar exploration here. If Commonwealth demonstrates that carbon capture is infeasible for this project, but carbon capture is shown to be feasible for other projects, then FERC must consider this in evaluating whether system alternatives would be more consistent with the public interest.

H. The Commonwealth Project Will Impact Multiple Sensitive Species

1. Eastern black rail

Commonwealth LNG is likely to adversely affect eastern black rails, as noted in the Commonwealth LNG biological assessment.¹⁴ The Commonwealth Project would directly impact approximately 33.6 acres eastern black rail habitat by permanently converting 30.8 acres of habitat to industrial use and temporarily clearing 2.8 acres of habitat to construct the proposed exclusion buffer enclosure.¹⁵ In addition to a direct loss of habitat, construction-related clearing, especially during non-winter months, is likely to result in direct mortality or impaired fitness of

¹⁴ Letter to U.S. Fish and Wildlife discussing the request to initiate formal consultation for the Commonwealth Project under CP19-502 Dkt. No. CP19-502, 30 (May 4, 2021) (eLibrary No. 20210504-3050) ("Biological Assessment").

¹⁵ *Id.*

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:
OEP/DG2E/Gas Branch 1
Commonwealth LNG, LLC
Commonwealth LNG Project
Docket Nos. CP19-502-000,
CP19-502-001
§ 375.308(x)

September 15, 2021

VIA FERC Service

David L. Wochner
Timothy J. Furdyna
K&L Gates LLP
1601 K Street, NW
Washington, DC 20006

Re: Environmental Information Request

Dear Mr. Wochner:

The information described in the enclosure is required for our analysis of the above-referenced application. **Please file a complete response within 15 days of the date of this letter.**

If certain information cannot be provided within this time frame, please indicate which items will be delayed and provide a projected filing date. **You should be aware that the information described in the enclosure is necessary for us to continue preparation of the National Environmental Policy Act document. We will establish a schedule for completing the environmental document based upon an expectation of timely and complete responses to our information requests.**

File your response in accordance with the provisions of the Federal Energy Regulatory Commission's (Commission's) Rules of Practice and Procedure. In particular, 18 Code of Federal Regulations (CFR) 385.2005 requires all responses to be filed under oath by an authorized Commonwealth LNG, LLC representative, and 18 CFR 385.2010 (Rule 2010) requires service to each person whose name appears on the official service list for this proceeding.

Electronic filing is encouraged using the Commission's eFiling system (see <http://www.ferc.gov/docs-filing/efiling.asp>). Be sure to prepare separate volumes, as outlined on the Commission's website at <http://www.ferc.gov/resources/guides/filing-guide/file-ceii.asp>, and label all controlled unclassified information (CUI) as described at <https://www.ferc.gov/docs-filing/labeling-guidance.pdf>. Critical Energy Infrastructure Information (CEII) (e.g., plot plans showing equipment or piping details) and privileged information (PRIV) (e.g., cultural resources material containing location, character, or ownership information; trade secret information; proprietary information) should be filed as non-public and labeled as: "**CUI//CEII – DO NOT RELEASE**" (18 CFR 388.113), "**CUI//PRIV – DO NOT RELEASE**" (18 CFR 388.112), and as otherwise appropriate with other statutes for labeling CUI (e.g., "**CUI//CEII/SSI – DO NOT RELEASE**" and in accordance with 49 CFR 15.13 marking requirements). All CUI should be filed separately from the remaining information, which should be marked "**Public.**" For assistance with the Commission's eFiling system, please contact FERC Online Support at FERCOnlineSupport@ferc.gov, (866) 208-3676 (toll free), or (202) 502-8659 (TTY).

In addition, effective July 1, 2020, hardcopy deliveries to the Commission's headquarters in Washington D.C. will only be accepted through the U.S. Postal Service. Hand-deliveries and submissions sent through carriers other than the U.S. Postal Service must be sent to 12225 Wilkins Avenue, Rockville, Maryland 20852 for processing (see Docket No. RM19-18-000; Order No. 862).

For all materials submitted, in addition to the copies filed with the Secretary of the Commission, please provide an electronic copy directly to our third-party environmental contractor, Cardno (one each to John Brewer and Kim Sechrist).

If you have any questions, please contact me at (202) 502-8559. Thank you for your cooperation.

Sincerely,



Nancy Fox-Fernandez
Environmental Project Manager
Office of Energy Projects

Enclosure

Enclosure

Commonwealth LNG, LLC (Commonwealth)
Commonwealth LNG Project (Project)
Docket Nos. CP19-502-000, CP19-502-001

ENVIRONMENTAL INFORMATION REQUEST**Resource Report 2**

1. Provide an update regarding the status of the U.S. Army Corps of Engineers wetland jurisdictional determination for the newly proposed pipeline route.
2. As requested by the National Marine Fisheries Service (NMFS) in their filing on June 25, 2021 (accession no. 20210625-5078), provide an update on the status of the final Beneficial Use of Dredge Materials (BUDM) plan. The NMFS has stated that the following should be included in the BUDM plan:
 - a. success criteria and a monitoring plan for the BUDM areas and restoration of the slurry pipeline rights-of-way;
 - b. a Dredge Material Management Plan for the BUDM excess dredge materials that would be placed at the Nearshore Disposal Area in the Gulf of Mexico south of Holly Beach; and
 - c. a resolution regarding the concern of NMFS that Commonwealth's currently proposed target construction and target settled elevations for the BUDM could adversely impact essential fish habitat at the site.

Include NMFS requested information in the final plan.

Resource Report 5

3. Regarding the environmental justice communities within 10 miles of the LNG Terminal site and crossed by the pipeline route, as identified by Commonwealth in its Response to Environmental Information Request Dated July 16, 2021 (submitted to FERC on August 5, 2021; accession no. 20210805-5099), describe outreach efforts to identify and communicate with these groups and individuals and the measures used to avoid and minimize Project impacts on the groups and individuals. Also, identify any efforts to continue outreach to environmental justice communities, including efforts to provide notices and Project information materials at places that are frequently visited within the community.
4. Provide an Environmental Justice Analysis by census block group for all off-site Park and Ride locations that Commonwealth would use to bus workers to the Project site during construction. The analysis should include a discussion of

impacts on Environmental Justice communities related to traffic, socioeconomics, air, and noise.

5. For any identified environmental justice communities that would be affected by the Park and Ride locations, describe outreach efforts to identify and communicate with these groups and individuals and the measures used to avoid and minimize Project impacts on the groups and individuals. Also, identify any efforts to continue outreach to environmental justice communities that would be affected by the Park and Ride locations, including efforts to provide notices and Project information materials at places that are frequently visited within the community.

Resource Report 6

6. Regarding the Horizontal Directional Drill (HDD) Feasibility Analysis filed by Commonwealth on August 17, 2021 (accession no. 20210817-5051), provide the following:
 - a. Project HDD-specific geotechnical data consisting of borings associated with the proposed HDD crossing of Highway 27/82;
 - b. a hydrofracture analysis based on geotechnical borings collected at the proposed HDD crossing of Highway 27/82; and
 - c. an updated HDD Feasibility Analysis containing the site-specific geotechnical data, including the site-specific geotechnical boring data added to the cross sections within the HDD Feasibility Analysis.

Resource Report 8

7. The Traffic Impact Study identified a single 80-acre parcel as a potential site for an off-site Park and Ride location. Provide land use impacts associated with this site, as well as any additional off-site parking areas that have been identified.

Resource Report 9

8. In response to a comment filed on August 12, 2021 (accession no. 20210812-5160), discuss Commonwealth's rationale for using the Lake Charles Regional Airport (WBAN 03937), located approximately 41 kilometers north of the Project site, as the representative site for meteorological data for AERMOD modeling versus using a more local station, such as the NOAA weather buoy located at Calcasieu Pass (Station CAPL1 – 8768094).
9. Clarify table 6.2 of Commonwealth's Class II Modeling Report in Support of Part 70 (Title V) Operating Permit and Prevention of Significant Deterioration Permit, filed on August 17, 2021 (accession no. 20210817-5051) in the following ways:

define the scenarios (column 3); provide the National Ambient Air Quality Standards (NAAQS) exceedances for each scenario; and provide the Significant Impact Levels relative to the values in the table and explain how those values do not exceed the Significant Impact Levels.

10. Provide the farthest distance from the proposed facility where any exceedance of the NAAQS is predicted by the model.

Resource Report 10

11. Regarding Commonwealth's August 17, 2021 filing containing alternative facility sites (accession no. 20210817-5051), as previously requested for alternative Terminal sites in the February 11, 2020 Environmental Information Request, provide estimated distances for feed gas pipelines, utility lines, and access roads to reach each of the alternative Terminal sites assessed. For each, provide the corresponding number of waterbodies and roads, acres of wetlands and forested land that would require crossing, and the number of residences within 50 feet.
12. In response to Sierra Club et. al.'s comments filed on the Commonwealth docket on August 3, 2021 (accession no. 20210803-5103) regarding Monkey Island as a potential option for an alternative facility site, Commonwealth has previously noted that the west side of Monkey Island is under lease by Monkey Island LNG. However, the planned CP2 LNG project (PF21-1-000) proposes to construct a portion of its facilities within an area that Commonwealth previously noted was unavailable. Reassess Monkey Island as a potential alternative facility site.
13. In response to Sierra Club et. al.'s comments filed on the Commonwealth docket on August 3, 2021 regarding Commonwealth's proposed LNG storage capacity, discuss whether Commonwealth could reduce the footprint of the Terminal site by reducing to five the number of 50,000 cubic meter (m^3) LNG storage tanks Commonwealth would construct and still achieve a total LNG storage capacity ($250,000 m^3$) that is $10,000 m^3$ greater than the volume proposed by Commonwealth in its August 2019 application ($240,000 m^3$).
14. In response to Sierra Club et. al.'s comments filed on the Commonwealth docket on August 3, 2021 regarding Commonwealth's proposed liquefaction processes, assess the feasibility and emissions output of potential alternative liquefaction processes (e.g., Air Products and Chemicals, Inc. C3MR or DMR processes) and liquefaction train power sources (i.e., electric drives vs. gas-fired turbines; simple-cycle vs. combined-cycle on-site generation) relative to Commonwealth's proposed approach.

15. In response to Sierra Club et. al.'s comments filed on the Commonwealth docket on August 3, 2021 regarding Commonwealth's proposed Terminal power source, provide the following:
 - a. a quantification of acreage by land use type of the rights-of-way that would be required for the primary and back-up transmission lines to connect the LNG Terminal to the nearest available substations and connect the Terminal to grid power (as described in section 10.8.1 of Resource Report 10).
 - b. a discussion regarding whether Commonwealth could use existing transmission lines in the vicinity of the Project site to provide power to the Terminal;
 - c. a discussion, if Commonwealth would not be able to use existing transmission lines, about whether the transmission line that Commonwealth would need to construct to the closest power substation could use or overlap with the right-of-way of the existing transmission lines;
 - d. comparison of the feasibility and emissions output of using combined cycle power generating units, which are most commonly used for constant electrical loads, instead of simple cycle electric generation units, which are most commonly used to respond to peaking power demands and often not expected to run constantly; and
 - e. a discussion regarding the feasibility of siting Commonwealth's proposed electric generation units at a location that is not within the currently proposed Terminal footprint as a method to reduce impacts on wetlands and wildlife habitat (including potential eastern black rail habitat).

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Resource Report 10 – Alternatives

13. In response to Sierra Club et. al.'s comments filed on the Commonwealth docket on August 3, 2021 regarding Commonwealth's proposed LNG storage capacity, discuss whether Commonwealth could reduce the footprint of the Terminal site by reducing to five the number of 50,000 cubic meter (m^3) LNG storage tanks Commonwealth would construct and still achieve a total LNG storage capacity ($250,000 m^3$) that is $10,000 m^3$ greater than the volume proposed by Commonwealth in its August 2019 application ($240,000 m^3$).

Response:

Commonwealth has already reduced the footprint of the Terminal site by approximately 13% (~17 acres) compared to the initial proposed footprint of the Terminal site. In its August 2019 application, Commonwealth proposed the use of six 40,000 cubic meter single containment storage tanks. The overall site plan revision A has been provided in Attachment Q.

During the project development, the decision was made to modify the storage tank design from a single containment to a full containment tank which significantly reduced the required spacing between the storage tanks. As a result the facility's overall footprint was reduced by approximately 17 acres. However, at that time the outer walls of the LNG storage tanks were fabricated from 9%-Ni steel.

Question 94 of FERC's January 2, 2020, Engineering Information Request addressed the 9%-Ni steel outer wall of the tank, pointing out that 49 CFR § 193.2161 requires an outer wall serving as a dike must be constructed of concrete, and suggested Commonwealth consider an alternative approach. Commonwealth knew that current regulations at 49 CFR § 193.2161 required concrete but believed that it had a design improvement. However, after considerable work Commonwealth concluded the approval process for a special permit from PHMSA was not economically feasible and elected to propose an alternative approach that used an outer wall constructed of concrete, as required by 49 CFR § 193.2161. It was this design, as well as increasing the storage tank capacity to 50,000 cubic meters each that was in the amended Application submitted July 8, 2021. The latest overall site plan revision F has been provided in Attachment R.

Commonwealth increased the storage tanks capacity, and overall storage volume for the Commonwealth LNG facility, to benefit operating flexibility during adverse weather events. We further assessed channel closures due to fog and other weather-related events and determined that additional storage capacity is required to minimize shutdowns and to reduce the environmental impact associated with each startup. The additional storage capacity allows the facility to continue operating, possibly at a reduced rate, until such weather event has passed, and LNG carriers can resume operation.

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Importantly, the modification in the amended Application does not increase or decrease the overall site plan as shown in revision F. The terminal footprint would not be reduced by eliminating one of the six storage tanks.

The design of the Commonwealth LNG facility has been optimized to make the most efficient use of land for any US LNG facility. With a total of 118.8 acres affected by construction and operation for the facility producing 8.4 MTPA this results in approximately 14 acres per million tonnes of LNG produced annually. Comparatively, Commonwealth's footprint is considerably smaller per MTPA than any other existing or approved US LNG export facility.

| LNG Export Facility | Location | Build Acres | LNG Design MTPA | Acres per MTPA |
|--------------------------|------------------------|-------------|-----------------|----------------|
| Commonwealth LNG | Cameron, LA | 118.8 | 8.4 | 14 |
| Magnolia LNG | Lake Charles, LA | 129 | 8.8 | 15 |
| Freeport LNG | Freeport, TX | 380 | 20 | 19 |
| Gulf LNG | Pascagoula, MS | 227 | 10.85 | 21 |
| Port Arthur LNG | Port Arthur, TX | 600 | 27 | 22 |
| Dominion Cove Point | Lusby, MD | 115 | 5.0 | 23 |
| Cameron LNG | Hackberry, LA | 572 | 25 | 23 |
| Corpus Christi LNG | Corpus Christi, TX | 345 | 15 | 23 |
| Lake Charles LNG | Lake Charles, LA | 387 | 16.5 | 23 |
| Calcasieu Pass | Cameron, LA | 260 | 10 | 26 |
| Jordan Cove | Coos Bay, OR | 203 | 7.8 | 26 |
| Sabine Pass LNG | Cameron Parish, LA | 870 | 30 | 29 |
| Texas LNG | Brownsville, TX | 120 | 4 | 30 |
| Plaquemines LNG | Plaquemines Parish, LA | 620 | 20 | 31 |
| Driftwood LNG | Calcasieu Parish, LA | 883 | 27.6 | 32 |
| Rio Grande LNG | Brownsville, TX | 970 | 27 | 36 |
| Golden Pass | Port Arthur, TX | 800+ | 16 | 50+ |
| Eagle LNG | Jacksonville, FL | 92 | 1 | 92 |
| Southern LNG Elba Island | Savannah, GA | 247 | 2.5 | 99 |

Below is the channel closure history for 2021 showing a typical year with closures from high wind, fog, and other weather-related events.

| Closure History | | |
|-----------------|-----------------|------------------------------|
| Event | Date/Time | Remarks |
| Channel Closed | 12/31/2020 1:15 | Due to high winds/rough seas |
| Channel Open | 1/1/2021 10:00 | All traffic |

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Closure History

| Event | Date/Time | Remarks |
|----------------|-----------------|-------------------------------------|
| Channel Closed | 1/6/2021 23:00 | Due to high winds/rough seas |
| Channel Open | 1/7/2021 6:00 | All traffic |
| Channel Closed | 1/10/2021 16:42 | Due to high winds/rough seas |
| Channel Open | 1/11/2021 11:00 | All traffic |
| Channel Closed | 1/20/2021 4:30 | Due to fog |
| Channel Open | 1/21/2021 8:00 | Outbound traffic only |
| Channel Closed | 1/21/2021 23:30 | Due to fog |
| Channel Open | 1/23/2021 10:00 | All traffic |
| Channel Closed | 1/23/2021 15:15 | Due to fog |
| Channel Open | 1/25/2021 5:30 | All traffic, inbounds first |
| Channel Open | 1/25/2021 12:00 | All traffic |
| Channel Closed | 1/25/2021 9:30 | Due to fog |
| Channel Open | 1/26/2021 3:30 | All traffic, inbounds first |
| Channel Open | 1/26/2021 9:00 | All traffic |
| Channel Closed | 2/9/2021 0:30 | Due to fog |
| Channel Open | 2/11/2021 9:00 | All traffic |
| Channel Closed | 2/14/2021 14:30 | Due to inclement (freezing) weather |
| Channel Open | 2/17/2021 10:00 | All traffic |
| Channel Closed | 2/17/2021 10:10 | Due to inclement (freezing) weather |
| Channel Open | 2/18/2021 7:00 | All traffic |
| Channel Closed | 2/20/2021 5:00 | Due to fog |
| Channel Open | 2/20/2021 11:00 | All traffic |
| Channel Closed | 2/22/2021 1:30 | Due to fog |
| Channel Open | 2/22/2021 8:00 | All traffic |
| Channel Closed | 2/23/2021 3:20 | Due to fog |
| Channel Open | 2/23/2021 10:30 | All traffic |
| Channel Closed | 2/24/2021 20:00 | Due to fog |
| Channel Open | 2/25/2021 9:30 | All traffic |
| Channel Closed | 2/26/2021 1:40 | Due to fog |
| Channel Open | 2/26/2021 14:30 | All traffic |
| Channel Closed | 2/26/2021 19:00 | Due to fog |
| Channel Open | 3/1/2021 15:30 | All traffic |
| Channel Closed | 3/12/2021 23:20 | Due to fog |
| Channel Open | 3/13/2021 12:00 | All traffic |
| Channel Closed | 3/15/2021 1:30 | Due to fog |
| Channel Open | 3/15/2021 13:00 | All traffic |
| Channel Closed | 3/15/2021 21:00 | Due to fog |
| Channel Open | 3/16/2021 11:30 | Outbound traffic only |
| Channel Open | 3/16/2021 17:00 | All traffic |
| Channel Closed | 3/24/2021 23:57 | Due to high winds/rough seas |

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| Event | Date/Time | Remarks |
|----------------|-----------------|--|
| Channel Open | 3/25/2021 13:00 | Outbound traffic first |
| Channel Closed | 3/26/2021 19:30 | Due to fog |
| Channel Open | 3/27/2021 12:00 | All traffic |
| Channel Closed | 3/27/2021 23:30 | Due to fog |
| Channel Open | 3/28/2021 10:30 | All traffic |
| Channel Closed | 3/30/2021 20:00 | Due to fog |
| Channel Open | 3/31/2021 14:00 | Outbound traffic first |
| Channel Closed | 4/1/2021 1:45 | Due to high winds/rough seas |
| Channel Open | 4/1/2021 9:30 | All traffic |
| Channel Closed | 4/13/2021 20:45 | Due to high winds/rough seas |
| Channel Open | 4/14/2021 7:30 | All traffic |
| Channel Closed | 4/15/2021 2:00 | Due to fog |
| Channel Open | 4/15/2021 6:00 | All traffic |
| Channel Closed | 4/23/2021 1:40 | Due to high winds/rough seas |
| Channel Open | 4/23/2021 9:00 | All traffic |
| Channel Closed | 4/30/2021 14:30 | Due to Riverfest boat races |
| Channel Open | 4/30/2021 18:00 | All traffic |
| Channel Closed | 5/1/2021 8:30 | Due to Riverfest boat races |
| Channel Open | 5/1/2021 18:00 | All traffic |
| Channel Closed | 5/1/2021 20:30 | Due to Riverfest fireworks display |
| Channel Open | 5/1/2021 22:00 | All traffic |
| Channel Closed | 5/18/2021 12:45 | Due to high winds/rough seas |
| Channel Open | 5/19/2021 10:00 | Inbound first, then all traffic |
| Channel Closed | 5/21/2021 17:30 | Due to high winds/rough seas |
| Channel Open | 5/22/2021 13:30 | All traffic |
| Channel Closed | 5/23/2021 0:30 | Due to rough seas and channel obstruction at LB 30 |
| Channel Open | 5/23/2021 10:00 | All traffic |
| Channel Open | 8/26/2021 19:00 | Port Condition Whiskey declared by COTP |
| Channel Open | 8/27/2021 17:00 | Port Condition X-Ray declared by COTP |
| Channel Open | 8/28/2021 17:00 | Port Condition Yankee declared by COTP |
| Channel Open | 8/29/2021 12:00 | Port Condition Normal declared by COTP |

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Resource Report 10 – Alternatives

14. In response to Sierra Club et. al.'s comments filed on the Commonwealth docket on August 3, 2021 regarding Commonwealth's proposed liquefaction processes, assess the feasibility and emissions output of potential alternative liquefaction processes (e.g., Air Products and Chemicals, Inc. C3MR or DMR processes) and liquefaction train power sources (i.e., electric drives vs. gas-fired turbines; simple-cycle vs. combined-cycle on-site generation) relative to Commonwealth's proposed approach.

Response:

Commonwealth selected the Air Products SMR process because it has been proven to be an efficient process for mid-scale LNG facilities. At Commonwealth's 1.4 MTPA train capacity the SMR process has similar, but slightly lower efficiency as the C3MR or DMR processes but with fewer pieces of equipment and a substantially reduced footprint. The C3MR and DMR processes are most often used in much larger LNG trains, typically over 4 – 5.5 MTPA each. Within a liquefaction technology, the process efficiency is affected by the efficiency performance of the combustion turbine that drives the refrigeration compressor. Commonwealth has designed the facility to optimize the amount of time that the machine can operate at peak efficiency. If a more efficient process is employed for the same available power, the emissions would remain the same, but the volume of LNG produced would increase. Emissions would not be reduced.

Commonwealth has relied on the industry experts to design our mid-scale facility to not only be cost-effective, but also to minimize environmental impacts and to minimize the overall footprint of the facility.

One such improvement is the Commonwealth LNG export terminal is designed to take advantage of waste heat recovery from the six gas turbines that are driving the mixed refrigerant compressors. The gas turbine exhaust heat is recovered and used in the feed gas pretreatment facility, thereby eliminating four fired oil heaters which reduces CO₂ emissions by 242,000 metric tons per year.

Early in the project development, we evaluated the use of electric motor drives versus gas turbine drives. When considering the use of electric motors, we evaluated production of electrical power on our site using both simple cycle and combined cycle power plants, and we evaluated purchasing commercially available electric power. The facility requires approximately 60 MW per train to drive the refrigeration compressors, for a total of 360 MW. An additional 120 MW is necessary for auxiliary electrical loads, for a total of 480 MW.

The use of a combined cycle power plant was evaluated. A 500 MW power plant would be required to drive the refrigeration compressors using electric motors, and to also provide the 120 MW auxiliary load needed for the balance of the plant.

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Such a power plant would require an additional 100 acres, thus essentially doubling the current overall footprint and environmental impact. Upon further analysis, the conclusion was reached that converting natural gas to electricity, then back to mechanical power, with variable frequency drive (VFD) electrical motors, is not the most efficient solution. The losses associated with the high voltage gear and the VFDs eliminate any benefit such solution may have in comparison with gas turbine direct mechanical drive of the refrigeration compressors and recovery of the gas turbines waste heat.

We also considered using commercially available electricity in lieu of building an onsite 500 MW power plant. A comprehensive review was conducted with Jefferson Davis Electric Cooperative (JDC). A power distribution company was brought in to assess the feasibility to provide the Commonwealth facility with high voltage power from the local electrical grid. It was determined that Entergy would need to make modifications to the existing grid and to add additional generating capacity within the Lake Charles area in order to deliver sufficient power to the Terminal site. When taking into account the various parameters such as reliability, availability, efficiency, footprint, and environmental impact, as well as the overall economics, the conclusions were reached to: use gas turbines for direct drive of the refrigeration compressors; incorporate waste heat recovery and eliminate four oil fired heaters thus further reducing emissions; and install a simple cycle power plant for the 120 MW auxiliary loads required for the balance of plant.

Our concerns about reliability and availability were confirmed when hurricanes Laura and Delta passed through Cameron Parish during the 2020 hurricane season. The result was that the high voltage power transmission lines that delivered electrical power to the Cameron LNG facility were damaged and Cameron LNG was left inoperable for an extended period of time. On August 20, 2020, Cameron LNG announced that its third train had begun commercial operations. Seven days later Hurricane Laura made landfall near Cameron Louisiana as a category 4 hurricane damaging, among many other things, the power lines that allowed Cameron LNG to operate. The Cameron LNG facility does not generate power onsite but relies solely on the purchase of commercially available electricity.

The Cameron LNG facility survived the storm with minimal damage. Entergy restored partial electric power to Cameron LNG on September 18, 2020, and Cameron LNG resumed receiving feed gas 33 days after the storm, on September 27, 2020. In contrast, nearby Sabine Pass LNG was also affected by Hurricane Laura on August 27. But at the Sabine Pass terminal, onsite generators consume natural gas to provide the facility with electric power. Feed gas deliveries to the Sabine Pass terminal resumed just 6 days later on September 2, 2020. Both Cameron LNG and Sabine Pass LNG use gas turbines for direct mechanical drive of the refrigeration compressors.

More recently, on September 14, 2021 hurricane Nicholas made landfall near Sargent, Texas as a Category 1 hurricane. As a result, the Freeport LNG facility lost power and was forced to shut down and remained offline for an extended period. These experiences

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confirm that being dependent on the local grid is a risk for an LNG facility in Southwest Louisiana and the Texas Gulf coast.

It is worth mentioning that at Cameron, Louisiana, nearby the Commonwealth LNG site, one year after Hurricane Laura, the high voltage power lines have not been restored and the community does not have access to electrical power from the state-wide power grid, but rather is being serviced by distributed diesel powered generators.

Commonwealth LNG's current design uses gas turbines for direct drive of the refrigeration compressors and, much like Sabine Pass terminal, has onsite gas turbines – generator sets that will consume natural gas to provide the facility with 120 MW of auxiliary electric power that is needed. The facility is designed to minimize environmental impacts while being almost as efficient as a combined cycle plant.

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Resource Report 10 – Alternatives

15. In response to Sierra Club et. al.'s comments filed on the Commonwealth docket on August 3, 2021 regarding Commonwealth's proposed Terminal power source, provide the following:
- a. a quantification of acreage by land use type of the rights-of-way that would be required for the primary and back-up transmission lines to connect the LNG Terminal to the nearest available substations and connect the Terminal to grid power (as described in section 10.8.1 of Resource Report 10).
 - b. a discussion regarding whether Commonwealth could use existing transmission lines in the vicinity of the Project site to provide power to the Terminal;
 - c. a discussion, if Commonwealth would not be able to use existing transmission lines, about whether the transmission line that Commonwealth would need to construct to the closest power substation could use or overlap with the right-of-way of the existing transmission lines;
 - d. comparison of the feasibility and emissions output of using combined cycle power generating units, which are most commonly used for constant electrical loads, instead of simple cycle electric generation units, which are most commonly used to respond to peaking power demands and often not expected to run constantly; and
 - e. a discussion regarding the feasibility of siting Commonwealth's proposed electric generation units at a location that is not within the currently proposed Terminal footprint as a method to reduce impacts on wetlands and wildlife habitat (including potential eastern black rail habitat).

Response:

- a.
- A comprehensive evaluation for providing electrical power to the Commonwealth site was conducted by JDC and their proposed partner American Transmission Company (ATC). Their proposed options are included in the Attachment S (CUI/PRIV). Several options were considered, and all pose significant issues regarding Entergy upgrades to existing systems, new Entergy substations, and long transmission lines. The costs associated with the proposed transmission lines are excessive and could not be supported by the Project.

One of the options included a pole line from the Mud Lake substation to the Commonwealth site, with redundant circuits. This is the same substation to which Cameron LNG is connected, and which left that LNG export terminal without power for an extended period of time during the 2020 hurricane season.

In all the considered scenarios, the Nelson power station north of Lake Charles would be the primary source for the electrical power generation required by the Commonwealth facility. The Nelson station is an old facility primarily fueled by coal.

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Please find a quantification of acreage by land use type of the right-of-way that would be required for the primary and back-up transmission lines to connect the LNG Terminal to the nearest available substations and connect the Terminal to grid power (as described in section 10.8.1 of Resource Report 10) in Table EIR-7, RR 10, Request 15a, Table 1.

| EIR-7, RR 10, Request 15a, Table 1 | | | |
|--|-------|---------------------------------|---------------------------------|
| Analysis of the Primary and Back-Up Transmission Lines | | | |
| Alternative Environmental/ Engineering Factors | Units | Primary Transmission Line | Back-Up Transmission Line |
| Length | Mile | 29.3 | 45.8 |
| Parallel/Adjacent to Existing Right-of-Way | Mile | 26.7 | 33.2 |
| Land Use (NLCD): | | | |
| Barren Land | Acres | 1.9 | 5.9 |
| Cultivated Crops | Acres | 0.0 | 85.6 |
| Deciduous Forest | Acres | 1.1 | 0.0 |
| Developed | Acres | 89.5 | 41.9 |
| Emergent Herbaceous Wetlands | Acres | 221.3 | 221.5 |
| Evergreen Forest | Acres | 0.1 | 2.1 |
| Mixed Forest | Acres | 1.6 | 0.7 |
| Grassland/Herbaceous | Acres | 5.1 | 36.2 |
| Open Water | Acres | 16.7 | 34.3 |
| Pasture/Hay | Acres | 16.0 | 121.1 |
| Shrub/Scrub | Acres | 0.2 | 1.6 |
| Woody Wetlands | Acres | 1.3 | 5.0 |
| Length and area based on GIS analysis and rounded. | | | |
| *Acreage based on 100-foot-wide right-of-way. | | | |

b.

Existing transmission lines do not have the (500 MW) capacity needed to serve the Commonwealth LNG export facility. It should also be noted that the existing pole line, serviced by JDC, was severely impacted by hurricanes Laura and Delta during the 2020 hurricane season. JDC has confirmed that to this date, September 2021, more than a year since hurricanes Laura and Delta, the power reinstated along Gulf Beach Highway is solely provided from temporary rental power generators, approximately 50 MW, running on liquefied petroleum gas.

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The entire JDC distribution grid that serves the local community is less than 60 MW of total capacity.

c.

The comprehensive evaluation conducted by JDC and ATC, provided in Attachment S (CUI PRIV), is based on using existing rights-of-way to the extent practicable.

d.

The Commonwealth LNG facility is based on using gas turbines to drive the mixed refrigerant compressors, and to recover the gas turbine 'waste' heat for use elsewhere in the facility. The waste heat generated by the hot gas turbine exhaust is used in the feed gas pretreatment process and eliminates the need for four gas fired oil heaters, thus also eliminating the associated emissions. The current design includes only one oil heater which would only be used during facility start-up.

During the early engineering development phase, Commonwealth learned that if the facility were to use electrical drives, that the electrical losses from the new substation, proposed north of the highway, to the six (6) x 60 MW electrical drives was estimated to be between 15 to 25 percent. These losses originate from the high voltage switch gear and the variable frequency drives needed to operate each of the six (6) 80,000 horsepower electrical motors.

e.

To relocate the auxiliary load generation units offsite, would expose the facility to the reliability issues associated with pole lines and the ever-constant threat from hurricanes and weather events. Having the auxiliary generators inside the facility and better protected from any storm, hurricane, or adverse weather event by being placed behind the protective surge wall, with minimum distances to the loads served, significantly reduces the risk of power failures and thereby increases the reliability and availability of the facility. Some discussions have been had to consider connecting the facilities auxiliary load generating capacity to the local Gulf Beach Highway pole line. Such a connection could serve as a backup to the local community in the event of future power outages. As pointed out before, more than a year after the 2020 hurricane season, JDC is still operating with rental generators.

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Resource Report 9 – Air and Noise Impacts

- Provide the cumulative modeled concentrations of criteria pollutants at any identified Environmental Justice communities that would exceed the National Ambient Air Quality Standards (NAAQS) during construction or operation of the proposed facility. The cumulative model should include background concentrations and pollutant sources that would impact those communities. Based on the modeling developed, clearly identify the potentially affected Environment Justice populations by block group for the corresponding distance (radius) of air emissions.

Response:

The Project is not located within an Environmental Justice (EJ) community. The nearest EJ communities identified according to the criteria specified in EIR-6, RR 5, Request 2 are separated from the LNG Facility and Pipeline by major waterbodies (i.e., the Calcasieu River and Calcasieu Ship Channel to the east; Calcasieu Lake to the north). Commonwealth's *Class II Modeling Report in Support of Part 70 (Title V) Operating Permit and Prevention of Significant Deterioration Permit (Class II Modeling Report)*; Accession No. 20210817-5051) provided the estimated air quality impacts associated with the Project's direct emissions. For criteria pollutants and averaging periods whose maximum impacts were predicted to be below the Significant Impact Levels (SILs) in the Significance Modeling Analyses (project sources only) in the *Class II Modeling Report*, air dispersion modeling was performed using receptors located at the point within the identified EJ communities nearest to the Project. The maximum modeled impacts of the project sources only are compared to the SILs and presented in EIR-8, RR 9, Request 1, Table 1 below. Estimated emissions of these criteria pollutants were below the SILs; therefore, no further modeling was necessary.

EIR-8, RR 9, Request 1, Table 1
Modeled Air Quality Impacts at Nearest Point within Defined EJ Sector
Project Sources Only

| Pollutant | Averaging Time | Significant Impact Level (SIL) ($\mu\text{g}/\text{m}^3$) | Tract 9702.01 BG3: Maximum Modeled Concentration ($\mu\text{g}/\text{m}^3$) | Tract 9701 BG1: Maximum Modeled Concentration ($\mu\text{g}/\text{m}^3$) | Tract 9702.01 BG1: Maximum Modeled Concentration ($\mu\text{g}/\text{m}^3$) |
|--------------------------------|---------------------|--|---|--|---|
| SO ₂ | 3-Hour | 25.0 | 2.1 | 0.9 | 0.5 |
| | 24-Hour | 5.0 | 0.78 | 0.41 | 0.20 |
| | Annual | 1.0 | 0.025 | 0.015 | 0.012 |
| PM _{2.5} ^a | Annual ^b | 0.2 | 0.036 | 0.040 | 0.022 |
| | 24-Hour | 5.0 | 1.20 | 0.68 | 0.45 |
| PM ₁₀ | Annual | 1.0 | 0.042 | 0.039 | 0.021 |
| | 24-Hour | 5.0 | 1.20 | 0.68 | 0.45 |
| CO | 1-Hour | 2,000 | 153 | 152 | 75 |
| | 8-Hour | 500 | 107 | 34 | 23 |
| O ₃ | 8-hour | 70 (ppb) | No direct O ₃ emissions (see below). | | |
| Pb | Rolling 3-mo. avg | 0.15 | No Pb emissions (see below). | | |

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Dated September 20, 2021

Submitted to FERC on October 5, 2021

| EIR-8, RR 9, Request 1, Table 1 Modeled Air Quality Impacts at Nearest Point within Defined EJ Sector Project Sources Only | | | | | | |
|---|-----------------------|---------------------------------------|---|--|---|--|
| Pollutant | Averaging Time | Significant Impact Level (SIL) | Tract 9702.01 BG3: Maximum Modeled Concentration | Tract 9701 BG1: Maximum Modeled Concentration | Tract 9702.01 BG1: Maximum Modeled Concentration | |
| | | ($\mu\text{g}/\text{m}^3$) | ($\mu\text{g}/\text{m}^3$) | ($\mu\text{g}/\text{m}^3$) | ($\mu\text{g}/\text{m}^3$) | |
| ^a Secondary formation impacts added | | | | | | |
| ^b Averaged over 5-years | | | | | | |

Ozone (O_3) is not emitted from any project source. However, secondary O_3 formation resulting from the project were analyzed using EPA's recommended Modeled Emission Rates for Precursors (MERPS) Tier I demonstration tool. MERPS predicts the maximum O_3 impact based on the Project's O_3 precursor (nitrogen oxides and volatile organic compound) emissions. The maximum predicted O_3 impact plus ambient background was 66.9 parts per billion (ppb) (8-hour average), which is below the National Ambient Air Quality Standards (NAAQS) (70 ppb).

The project will not be a source of lead; therefore, no analysis for this criteria pollutant was required.

For criteria pollutants and averaging periods that were shown to have exceeded the SILs in the Significance Modeling Analyses in the *Class II Modeling Report*, cumulative air dispersion modeling was performed at EJ receptors. The cumulative modeled design concentrations at these locations, which include the ambient background concentrations and impacts from nearby sources in addition to the Project, are compared to the NAAQS in EIR-8, RR 9, Request 1, Table 2 below:

| EIR-8, RR 9, Request 1, Table 2 Modeled Air Quality Impacts at Nearest Point within Defined EJ Communities Cumulative Modeling Analyses (Project Sources + Off-Site Inventory + Ambient Background) | | | | | |
|--|-----------------------|------------------------------|--|---|--|
| Pollutant | Averaging Time | NAAQS | Tract 9702.01 BG3: Modeled Design Concentration | Tract 9701 BG1: Modeled Design Concentration | Tract 9702.01 BG1: Modeled Design Concentration |
| | | ($\mu\text{g}/\text{m}^3$) | ($\mu\text{g}/\text{m}^3$) | ($\mu\text{g}/\text{m}^3$) | ($\mu\text{g}/\text{m}^3$) |
| NO ₂ | 1-hour ^a | 188 | 169 | 172 | 183 |
| | Annual | 100 | 1.53 | 1.13 | 0.31 |
| SO ₂ | 1-Hour ^b | 196 | 65.3 | 63.5 | 59.2 |
| PM _{2.5} ^c | 24-Hour ^d | 35 | 21.5 | 20.8 | 20.4 |

^a Max daily H8H averaged over 5-years
^b Max daily H4H averaged over 5-years
^c Secondary formation impacts added
^d Averaged over 5-years

Response to Environmental Information Request
Dated September 20, 2021

Submitted to FERC on October 5, 2021

As can be seen in the table, the predicted emissions from the Project and from nearby sources plus ambient background concentrations do not exceed the NAAQS. Additionally, for the 1-hour NO₂ design concentrations, the contribution from the Project sources to the design concentration are well below 1%.

Response prepared by:

Name: Keith Suderman

Affiliation: TRC

Phone: 770-270-1192

Response to Environmental Information Request
Dated September 20, 2021

Submitted to FERC on October 5, 2021

Resource Report 9 – Air and Noise Impacts

2. Provide the distances, and a map showing the isopleths, for the farthest distances from the proposed facility where any exceedance of the NAAQS is predicted by the model provided in response to question 2.

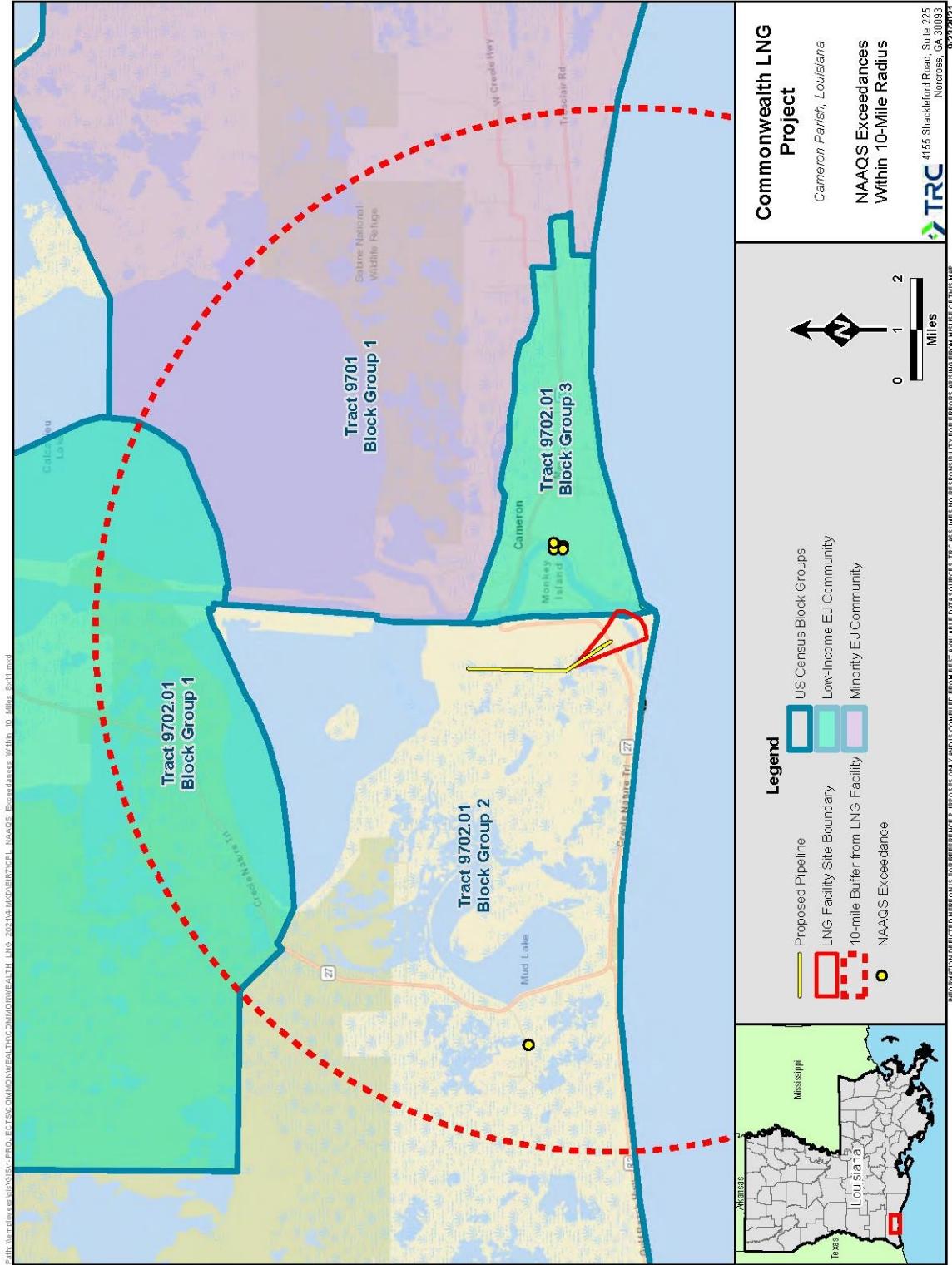
Response:

All modeled criteria pollutants and averaging periods showed compliance with the NAAQS at all points within the EJ communities within 10 miles of the LNG Terminal site or crossed by the pipeline route (as identified in EIR-6, RR 5, Request 2), except for the 1-hour NO₂ standard. The *Class II Modeling Report* (Accession No. 20210817-5051), predicted exceedances of the 1-hour NO₂ standard. The modeling was conducted in accordance with the approved modeling protocol reviewed and accepted by Louisiana Department of Environmental Quality (LDEQ; May 12, 2021). These exceedances were predicted to occur even in the absence of the Project. That is, these predicted exceedances are not the result of the Project; they are the result of other existing emissions sources in the multisource modeling inventory provided by LDEQ and Texas Commission on Environmental Quality (TCEQ). These exceedances of the 1-hour NO₂ standard are shown in the figure below as yellow circles.

The most distant receptor within an identified EJ community within 10 miles of the LNG Terminal site or crossed by the pipeline route that would exceed the NAAQS during construction or operation of the proposed LNG Facility was for 1-hour NO₂, located approximately 1.8 miles to the east of the LNG Facility, as shown in the figure below. These exceedances are resultant from existing nearby emission sources included in the 1-hour NO₂ multisource modeling inventory and background ambient air concentrations. Commonwealth's estimated contributions to the modeled exceedances are less than 1%.

Response to Environmental Information Request
Dated September 20, 2021

Submitted to FERC on October 5, 2021



Response to Environmental Information Request
Dated October 18, 2021

Submitted to FERC on October 25, 2021

Resource Report 9 – Air and Noise Impacts

3. In your October 5, 2021 response, you state in response to Question 1 that there was no modeled exceedance of 1-hr NO₂ for EJ tracts 9702.01 BG1, 9701 BG1, and 9702.01 BG3. Table EIR-8, RR 9, Request 1, Table 2 shows cumulative concentrations of 169, 172, 183 ug/m³ respectively which are below the NAAQS of 188 ug/m³. However, in your response to Question 2, you state that "The Class II Modeling Report (Accession No. 20210817-5051), predicted exceedances of the 1-hour NO₂ standard" and the figure shows several points of exceedance in Tract 9702.01 BG1 and BG2. Explain the discrepancy in your responses.

Response:

The modeling results presented in EIR-8, RR 9, Request 1, Table 2, Modeled Air Quality Impacts at Nearest Point within Defined EJ Communities, Cumulative Modeling Analyses (Project Sources + Off-Site Inventory + Ambient Background) were based on the nearest point within the defined Environmental Justice (EJ) communities (Tract 9702.01 BG3, Tract 9701 BG1, Tract 9702.01 BG1). These three unique receptor locations were defined to ensure that the maximum potential air quality impacts from the Project were captured. As discussed in the response to EIR-8, RR 9, Request 1, no National Ambient Air Quality Standards (NAAQS) exceedances were expected at those three locations.

The predicted exceedances identified in EIR-8, RR 9, Request 2 are from the full Class II air dispersion modeling analysis that included a total of 3,667 receptors (see Section V of the Class II Modeling Report [Accession No # 20210817-5051] for details on the receptor array), several of which fell inside the identified EJ tracts. These additional receptors within the EJ tracts did show exceedances of the NAAQS as shown in the figure provided in the response to EIR-8, RR 9, Request 2. However, as discussed in that response, these exceedances were predicted to occur even in the absence of the Project. That is, these predicted exceedances are not the result of the Project; they are the result of other existing emissions sources in the multisource modeling inventory provided by the Louisiana Department of Environmental Quality and the Texas Commission on Environmental Quality.

To ensure that FERC has sufficient information to continue review of this issue, EIR-9, RR 9, Request 3, Table 1 provides the concentration at each of the points of exceedance as shown in the figure provided in our response to EIR-8, RR 9, Request 2. Commonwealth's estimated contributions to the modeled exceedances are less than 1%.

Commonwealth LNG Project
FERC Docket No. CP19-502-000

Response to Environmental Information Request
Dated October 18, 2021

Submitted to FERC on October 25, 2021

| EIR-9, RR 9, Request 3, Table 1 Modeled NO₂ Concentrations at Locations within Defined EJ Communities Showing Exceedances of the 1-hour NO₂ Standard | | | | | | |
|---|-------------------------|---------------------------------------|--------------|-----------------|--|---|
| Pollutant | Averaging Period | Receptor Location ^a | | EJ Tract | Modeled Concentration Without Project (Off-Site Inventory + Ambient Background) | Modeled Concentration With Project (Project Sources + Off-Site Inventory + Ambient Background) |
| | | X (m) | Y (m) | | µg/m³ | µg/m³ |
| NO ₂ | 1-Hour ^b | 468,700 | 3,295,300 | 9702.01 BG3 | 204.43 | 204.44 |
| | | 468,600 | 3,295,400 | 9702.01 BG3 | 193.06 | 193.06 |
| | | 468,800 | 3,295,400 | 9702.01 BG3 | 189.13 | 189.56 |
| | | 468,700 | 3,295,100 | 9702.01 BG3 | 188.90 | 188.97 |
| | | 468,600 | 3,295,100 | 9702.01 BG3 | 188.22 | 188.22 |

^a UTM NAD83 Zone 15N

^b Maximum Daily High 8th High (H8H) Averaged Over 5-Years

Response prepared by:

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Federal Energy
Regulatory
Commission

Office of
Energy
Projects

March 2022

FERC/DEIS-0316

**DRAFT
ENVIRONMENTAL IMPACT STATEMENT
for the
COMMONWEALTH LNG PROJECT**

Commonwealth LNG, LLC

Docket Nos. CP19-502-000
CP19-502-001

Federal Energy Regulatory Commission
Office of Energy Projects
Washington, DC 20426

Cooperating Agencies:



U.S. Army
Corps of Engineers



U.S. Coast Guard



U.S. Department
of Energy



U.S. Department
of Transportation



U.S. Environmental
Protection Agency



U.S. Fish and
Wildlife Service



National Oceanic
Atmospheric Administration -
National Marine Fisheries Service

technologies are feasible for use by LNG projects such as Commonwealth (DOE, 2017). The 2017 DOE report states that although carbon capture technologies appropriate for natural gas systems have been proven technically feasible, these technologies are too expensive to deploy because they have not been proven at full scale and the capital and operating costs are too expensive when compared to the limited revenue generating applications for captured CO₂ that are currently available. That is, the captured CO₂ must either be used or stored and the demand for using captured CO₂ does not offset the cost of capturing the CO₂; nor is there widespread availability of locations to store the captured CO₂. The DOE notes that since 2017 DOE has continued research and development to enhance technical understanding and reduce cost for capturing and safely using or storing CO₂. DOE has awarded funding to help projects working to accelerate the deployment of Carbon Capture Utilization and Sequestration. In implementing the Bipartisan Infrastructure Law, DOE is pursuing further advancements in all aspects of Carbon Capture Utilization and Sequestration. However, Commonwealth states that carbon capture technologies are not technically feasible for the Project, primarily due to the lack of existing sequestration infrastructure. Therefore, Commonwealth has not proposed to implement carbon capture technologies at the LNG Facility to reduce CO₂ emissions from the Project. Commonwealth's position notwithstanding, we note that other LNG projects in the general Project vicinity, such as Rio Grande LNG, LLC (Docket No. CP22-17) and Venture Global's CP2 LNG project (Docket No. CP22-21), which would be constructed about 1.5 miles from the proposed Commonwealth LNG terminal, have found that carbon capture and sequestration would be feasible for their projects and have proposed to implement it as part of their projects.



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23 May 2022

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

RE: CP19-502 Commonwealth LNG Fossil Gas Export Terminal and associated facilities

Dear Commissioners and Ms. Bose,

I am writing on behalf of Healthy Gulf¹ to incorporate the comments and content submitted by Sierra Club et al., regarding the Draft Environmental Impact Statement ("DEIS") prepared for the Commonwealth LNG fossil gas export terminal project.² We advocate the "No Action" alternative. We also wish to clarify the Healthy Gulf position on carbon capture and sequestration ("CCS"), in partial reference to the Sierra Club et al., comments. CCS is not a solution for the climate crisis. While CCS may be feasible, or may be found to be feasible in the future by regulating agencies, Healthy Gulf maintains that CCS is a false solution that entrenches the fossil fuel industry even further at a time when we need to be transitioning to renewable energy.

While Healthy Gulf agrees that there is inconsistency in the way other agencies have handled CCS proposals versus FERC, we maintain that CCS is ineffective, inefficient, unproven and entirely not in the public interest. Below, we summarize several ways the public is not served by CCS.

CCS is prohibitively expensive, energy-intensive, unproven at scale, and does not reduce carbon in the atmosphere.³ Of particular importance to targeted environmental justice and climate justice communities in Louisiana and Texas, the technology also poses environmental, safety, and health risks.⁴ CCS technology entrenches reliance on fossil fuels rather than accelerating the needed transition to

¹Healthy Gulf is a diverse coalition of individual citizens and local, regional, and national organizations committed to uniting and empowering people to protect and restore the natural resources of the Gulf of Mexico.

² https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20220523-5151&optimized=false

³ Center for International Environmental Law, *Confronting the Myth of Carbon-Free Fossil Fuels: Why Carbon Capture Is Not a Climate Solution*, available at <https://www.ciel.org/reports/carbon-capture-is-not-a-climate-solution/>

⁴ Center for International Environmental Law, *Carbon Capture and Storage: An Expensive and Dangerous Proposition for Louisiana Communities*, available at <https://www.ciel.org/carbon-capture-and-storage-an-expensive-and-dangerous-proposition-for-louisiana-communities/>

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

IN THE MATTER OF)
Commonwealth LNG, LLC)
)
)

**Docket Nos. CP19-502-000
CP19-502-001**

**MOTION TO INTERVENE AND COMMENTS ON THE DRAFT ENVIRONMENTAL
IMPACT STATEMENT OF NATURAL RESOURCES DEFENSE COUNCIL**

INTRODUCTION

The Natural Resources Defense Council (NRDC) submits the following Motion to Intervene and Comments on the Federal Energy Regulatory Commission's (FERC or Commission) Draft Environmental Impact Statement (DEIS) for the Commonwealth liquefied natural gas (LNG) project (the Project). Commonwealth LNG, LLC (Commonwealth or Applicant) proposes to construct and operate a greenfield LNG export facility with a nominal capacity of 390.3 billion cubic feet per year (bcf/y), peak capacity of 441.4 bcf/y, and would include a three-mile accompanying natural gas supply pipeline.¹ Docket No. CP19-502-000. The Project would consist of six gas liquefaction trains (with liquefaction and production capacities of 1.4 million tonnes per annum each), six LNG storage tanks (with storage capacities of 40,000 cubic meters each), and one marine berth capable of accommodating LNG carriers with capacities up to 216,000 cubic meters. Commonwealth would construct a 30-inch-diameter gas pipeline from the LNG export facility, extending 3.04 miles north to interconnect with other gas pipelines within Cameron Parish, Louisiana. As discussed in depth below, NRDC's position is

¹ Commonwealth is seeking approval of the pipeline as an export facility under Section 3 of the Natural Gas Act (NGA) rather than as a pipeline engaged in interstate service under Section 7 of the NGA.

that the DEIS fails to comply with the National Environmental Policy Act's (NEPA) requirement that agencies take a "hard look" at the environmental impacts of, and alternatives to, a proposed action. Further, if approved and completed, the Project would cause significant and irreparable harm to communities, species, the environment, and climate that are directly inconsistent with the public interest. Project authorization would therefore be contrary to the foundational elements of the NGA.

PROCEDURAL BACKGROUND

On October 16, 2019, Commonwealth submitted an application to the U.S. Department of Energy (DOE) requesting authorization to export up to approximately 441.4 billion cubic feet per year of LNG to free trade agreement (FTA) nations for a 25-year term and to non-FTA nations for a 20-year term. DOE approved Commonwealth's application to export to FTA nations on April 17, 2020; it noted that it would address Commonwealth's application to export to non-FTA nations in a separate order. On September 11, 2020, Commonwealth amended its application to export LNG to non-FTA nations to request an export term through December 31, 2050, instead of the 20-year term Commonwealth initially requested.² Commonwealth's application to export to non-FTA nations remains pending with DOE.

On August 20, 2019, Commonwealth filed its FERC application under Section 3 of the NGA. On March 31, 2022, the Commission issued its DEIS for the Project. The Commission invited comments on the DEIS as well as motions to intervene from those seeking to become a party to the proceeding.

² On August 25, 2020, DOE announced in the Federal Register (85 Fed Reg. 52237) that it had established a new policy extending the standard term for authorizations to export gas from the lower-48 states to non-FTA nations through December 31, 2050, discontinuing its practice of issuing standard 20-year export terms.

1091 (N.D. Cal. 2009) (“To fulfill NEPA’s goal of providing the public with information to assess the impact of a proposed action, the ‘no action’ alternative should be based on the status quo.”). Thus, the current alternatives analysis for the Project is fundamentally flawed. To comply with NEPA, the alternatives analysis must be revised to include a true no-action alternative that accurately serves as the baseline for the Commission’s NEPA analysis. *See* 46 Fed. Reg. at 18,027 (defining the “no action alternative” in instances involving federal decisions on proposed projects to be where the proposed activity would not take place).

III. The DEIS wrongfully concludes that impacts to environmental justice communities “would not be disproportionately high and adverse,” despite the fact that the closest environmental justice block groups are located approximately 528 feet from the Project facility.

The principles of environmental justice (EJ) require agencies to consider whether the projects they authorize will have a “disproportionately high and adverse” impact on traditionally marginalized communities. Like the other components of an EIS, an EJ analysis is measured against the arbitrary and capricious standard. *See Cmtys. Against Runway Expansion, Inc. v. FAA*, 355 F.3d 678, 689 (D.C. Cir. 2004) (explaining that arbitrary-and-capricious analysis applies to every section of an EIS, even sections included solely at the agency’s discretion). Thus, while the agency’s “choice among reasonable analytical methodologies is entitled to deference,” its analysis must nevertheless be “reasonable and adequately explained.” *Id.* Consistent with NEPA, the agency must take a hard look at EJ issues. *See Latin Ams. for Social & Econ. Dev. v. Fed. Highway Admin.*, 756 F.3d 447, 475–77 (6th Cir. 2014).

Applying those principles here, the Commission’s core EJ conclusions are arbitrary, capricious, and insufficient for meeting NEPA’s requirements. As the Commission is aware, EJ

is not merely a box to be checked.¹² Proper consideration of EJ impacts is a key imperative required by NEPA, the APA and the NGA.¹³

Here, the Commission concludes (in both Sections 4.9.12.4 and 5.1.10.1) that impacts to EJ communities will not be “disproportionately high and adverse” because the Project will not be directly located within an EJ community. This finding is arbitrary and capricious – the Commission itself acknowledges that the nearest EJ census block group to the Project is approximately 0.1 miles from the proposed Project site, or put differently, a mere 528 feet from the Project site. Equally concerning, the Commission identifies that the closest residence to the Project is 3,300 feet away from the terminal. This conclusion, that because a project is not *directly* located in an EJ community it does not have a disproportionate effect on that EJ community, ignores the most basic principles of EJ and the basic reality of the manner in which EJ communities are disproportionately exposed to environmental impacts.¹⁴ Noise, emissions and visual impacts cannot be curtailed by a census block border. This conclusion cannot be squared with the Commission’s duties under NEPA, the APA and the NGA.

IV. The meager environmental justice analysis laid out in the DEIS is inadequate and sets the Commission up to fail its goal to assess cumulative impacts on environmental justice communities.

This DEIS simply does not provide the necessary information to allow the Commission to meet its recently articulated commitment to engage in fulsome and adequate EJ reviews when

¹² *Friends of Buckingham v. State Air Pollution Control Bd.*, 947 F.3d 68, 92 (4th Cir. 2020).

¹³ *E.g. Vecinos Para El Bienestar de la Comunidad Costera v. FERC*, 6 F.4th 1321, 1330–31 (D.C. Cir. 2021) (remanding a Commission order in part based on a “deficient” EJ analysis).

¹⁴ See CATF and NAACP, *Fumes Across the Fence-Line* (Nov. 2017). Available at <https://naacp.org/resources/fumes-across-fence-line-health-impacts-air-pollution-oil-gas-facilities-african-american>.

determining whether or not to authorize proposed projects. In its issuance of the 2022 Certificate Policy Statement (albeit currently in draft form¹⁵) (2022 Certificate Policy), the Commission, for the first time, focused on EJ directly in a policy statement.¹⁶ In doing so, the Commission addressed many of its failings on EJ, noted both in public comments and in decisions by federal courts, which have made it plain that the Commission has a legal mandate to adequately consider project impacts on EJ communities. The Commission expressly noted its commitment to apply the “Impacts on Environmental Justice Communities” framework laid out in the 2022 Certificate Policy to both NGA Section 7 pipeline reviews and NGA Section 3 terminal reviews.¹⁷

The 2022 Certificate Policy allows a wide array of resources to be considered when scoping EJ communities and for assessing direct, indirect, and cumulative impacts.¹⁸ The Commission also rightly recognizes that a “wide range of data” should inform the Commission’s evaluation of cumulative impacts, which the Commission has identified are akin to “pre-existing conditions” that can exacerbate adverse impacts on communities.¹⁹ Under the Commission’s articulated framework, analysis of factors such as “air pollution, heat vulnerability, and the

¹⁵ Final reply comments on the 2022 Certificate Policy, *Certification of New Interstate Natural Gas Facilities*, 178 FERC ¶ 61,107 (2022) (hereinafter 2022 Certificate Policy), are due on May 25, 2022. Many initial comments in the docket indicate that its provisions related to EJ are embraced by industry (many of whom are seeking more guidance to assist their engagement with EJ communities under this framework), communities and EJ advocates, alike. *E.g.*, “Comment of Comments of Interstate Natural Gas Association of America under PL18-1 et. al.” at P 78-81, Accession No. 20220425-5448. *See also generally* “Comment of WEACT for Environmental Justice under PL18-1 et.al.,” Accession No. 20220505-5010; *see also* “Comments of Enbridge Gas Pipelines under PL18-1 et. al.,” at P 114–17, Accession No. 20220425-5451.

¹⁶ 2022 Certificate Policy, *supra* note 16.

¹⁷ *Id.* at 86.

¹⁸ *Id.* at P 92.

¹⁹ *Id.* at P 90.

effects of pre-existing infrastructure (e.g., bus depots, highways, and waste facilities)” can be informed “by a wide range of data, including, for example, health statistics such as cancer clusters, asthma rates, social vulnerability data, and community resilience data.”²⁰ These readily-available indicators do not appear in the DEIS.²¹ The meager and insufficient EJ analysis in the DEIS frustrates the Commission’s articulated desire (and legal mandate) to “carefully examine cumulative impacts on environmental justice communities.”²²

V. The Commission’s analysis of air quality impacts improperly conflates NAAQS attainment as insignificance.

NEPA requires agencies to consider “every significant aspect of the environmental impact of a proposed action[.]” *See Greater Yellowstone Coal. v. Lewis*, 628 F.3d 1143, 1150 (9th Cir. 2010). This includes air quality impacts. In the DEIS, the Commission considers Project impacts on air quality, both from Project construction and from terminal operations. DEIS at 4-185. For air quality impacts related to both construction and (primarily) related to Project operation, the DEIS equates attainment and compliance with air quality regulations with insignificance. DEIS at 5-381. Mere attainment with air quality standards does not in and of itself equal insignificance. Of course the emissions will be subject to permit restrictions. If the

²⁰ *Ibid.*

²¹ *See, e.g.*, Louisiana School of Public Health, *Louisiana Cancer Maps*, available at <https://sph.lsuhsc.edu/louisiana-tumor-registry/data-usestatistics/louisiana-data-interactive-statistics/louisiana-cancer-maps/>; NOAA, *Social Vulnerability Mapping*, available at <https://nichis.cpo.noaa.gov/vulnerability-mapping>; EPA, *EJSCREEN Map Descriptions*, available at <https://www.epa.gov/ejscreen/ejscreen-map-descriptions> (citing specifically to indicate asthma rates); U.S. Census Bureau, *Community Resilience Estimates*, available at <https://www.atsdr.cdc.gov/placeandhealth/svi/index.html>, <https://www.census.gov/programs-surveys/community-resilience-estimates.html>.

²² 2022 Certificate Policy, *supra* note 16, at P 90.

estimated emissions would exceed regulatory permittable levels, the facility could not be permitted and could not be built. The point of an EJ analysis is to take a hard look at instances where one or more facilities — sited within the same community and operating within the bounds of their permits — exacerbate inequitable health and environmental outcomes. Concluding that there are no disproportionately high and adverse health outcomes so long as nobody does anything illegal fails to undertake the inquiry seriously.²³

For construction impacts, the DEIS concludes that air quality impacts would not be significant because: (1) “[v]ehicular and/or marine vessel emissions from gasoline and diesel engines would comply with applicable EPA mobile source emission regulations...by using equipment manufactured to meet these specifications,” (2) that “the combustion and fugitive dust emissions that would occur during construction would be largely limited to the immediate vicinity of the Terminal site and to a lesser extent in the areas where the Pipeline would be constructed,” and, (3) that “these emissions would represent a small portion of Cameron Parish’s yearly emissions inventories and would subside once construction has been completed.” DEIS at 5-381 (In-text citation omitted). In its Air Quality conclusions section (Section 5.1.12.1), the Commission identifies explicitly *only* the construction-related air quality impacts as significant or insignificant. *Id.*

As for impacts on air quality during project operation, the DEIS notes that impacts on air quality during operation would primarily result from emissions related to (1) the liquefaction trains and associated generators and flare systems of the terminal, (2) mobile emissions sources such as cars and trucks associated with the terminal facility, (3) LNG carriers and associated tugs

²³ See Amicus Brief In Support of Conservation Petitioners, *Atlantic Coast Pipeline v. FERC*, No. 18-1224 (D.C. Cir. 2018). Available at [amicus-brief-ferc-approval-atlantic-coast-pipeline-20190415.pdf](https://nrdc.org/sites/default/files/2019-04/amicus-brief-ferc-approval-atlantic-coast-pipeline-20190415.pdf) (nrdc.org).

at the marine facility, and (4) emissions related to the above-ground pipeline. *Id.* In its conclusions of the operation-related air quality impacts, the Commission concludes that the Applicant's air quality dispersion analysis indicates that the "ambient pollution concentrations that would result from [operational] emissions would not lead to any potential exceedance of air quality impact criterions." *Id.*

A core feature of NEPA-compliant EISs are significance assessments. When the Commission cannot determine significance, it must adequately explain why it cannot. Here, the Commission has failed to make a complete conclusion of significance or insignificance for an entire (and in this instance, the predominate) type of air quality impacts because it yet again wrongfully conflates attainment, or a project's lack of a blatant Clean Air Act violation, with insignificance. DEIS at 5-381. This is not what NEPA mandates — the Commission must still explicitly conclude whether air quality impacts are significant or not. The public should not be left to infer the agency's determination.

Here, the Commission has failed to make an explicit significance determination (or to provide an explanation for why it cannot offer a significance determination) pertaining to operational air quality impacts.²⁴ This failure is particularly troubling when considering that the Commission identified that results of Commonwealth's modeling to determine source contribution in comparison with the NAAQS demonstrated that the modeled maximum impact plus background sources for 1-hour NO₂ (229 micrograms per meter cubed [$\mu\text{g}/\text{m}^3$]) exceeded the NAAQS of 188 $\mu\text{g}/\text{m}^3$. Commonwealth conducted a source contribution analysis to determine whether the Project would contribute significantly to the modeled NAAQS

²⁴ Compare with construction-related impacts on local air quality where the Commission explicitly concludes that "construction-related impact on local air quality during construction of the Terminal and Pipeline would not be significant." DEIS at 5-381.

exceedance. DEIS at 5-381. The Commission contextualizes this result and states that the “proportions of the exceedance concentrations attributable to the Project are very small,” as “the highest proportion of the Project contribution for 1-hour NO₂ to an exceedance concentration is 0.002 percent,” that “exceedances would still be predicted in the absence of the Project (i.e., the existing background emissions sources from LDEQ’s Emissions and Inventory Reporting Center are driving the NAAQS exceedances)” and Commonwealth’s “modeling analysis demonstrates that the proposed Project would have a minor (0.0002 percent) contribution to the modeled maximum impact.” *Id.* The Commission finally concludes that, “based on this small level of impact, [it does] not believe the Project would cause or contribute to the potential NAAQS exceedance.”

Barring inference, this is not a conclusion of significance or insignificance. *Id.* The Commission’s dismissal of impacts which (as modeled) would end in a 1-hour NO₂ exceedance is troubling. The Commission’s conclusion that because an exceedance “would still be predicted in the absence of the Project” foregoes core principals of cumulative impacts analysis and reasoned environmental decision-making for the proposition that because a particular place, Parish or community already faces negative environmental outcomes, that further contributions to that negative impact (even if minor) are acceptable.²⁵ This conclusion indicates that the Commission has neither taken a hard look at the air quality impacts of the Project, nor made a full and explicit significance determination for operational air quality impacts.

VI. The Commission refuses to adequately consider the climate change implications of the Project.

²⁵ See Randolph, Ned. "Pipeline Logic and Culpability: Establishing a Continuum of Harm for Sacrifice Zones." *Frontiers in Environmental Science* 9 (2021).

The Commission continues to wrongfully shirk its responsibility and commitment to determine whether or not the Project’s greenhouse gas (GHG) contributions are significant or insignificant.²⁶ DEIS at 4-363. At a minimum, the Commission has a duty to consider the environmental impacts associated with the construction and operation of the Commonwealth terminal. *See Venture Global Calcasieu Pass, LLC*, 166 FERC ¶ 61,144 (2019), at p. 2 (Comm’r LaFleur, concurring) (noting that the Commission “has the clear responsibility to disclose and consider the direct and cumulative impacts of the proposed LNG export facility, in order to satisfy our obligations under NEPA and Section 3 of the NGA. While the Commission continues to claim that it cannot, as articulated by then-Commissioner Glick in his dissent to the Jordan Cove certificate order (in which the Commission similarly refused to analyze project impacts on climate change²⁷) the Commission could indeed take action:

The Commission could, for example, select one methodology to inform its reasoning while also disclosing its potential limitations or the Commission could employ multiple methodologies to identify a range of potential impacts on climate change. In refusing to assess a project’s climate impacts without a perfect model for doing so, the Commission sets a standard for its climate analysis that is higher than it requires for any other environmental impact. . . [E]ven without any formal

²⁶ See DEIS at 4-363. “To date, Commission staff have not identified a methodology to attribute discrete, quantifiable, physical effects on the environment resulting from the Project’s incremental contribution to GHGs. Without the ability to determine discrete resource impacts, Commission staff are unable to assess the Project’s contribution to climate change through any objective analysis of physical impact attributable to the Project. Additionally, Commission staff have not been able to find an established threshold for determining the Project’s significance when compared to established GHG reduction targets at the state or federal level. This EIS is not characterizing the Project’s GHG emissions as significant or insignificant because the Commission is conducting a generic proceeding to determine whether and how the Commission will conduct significance determinations going forward.”

²⁷ Compare Commonwealth DEIS with Jordan Cove EIS at 4-850 (stating that “there is no universally accepted methodology to attribute discrete, quantifiable, physical effects on the environment to Project’s incremental contribution to GHGs” and “[w]ithout the ability to determine discrete resource impacts, we are unable to determine the significance of the Project’s contribution to climate change.”); see also *Jordan Cove Energy Project, L.P.*, 170 FERC ¶ 61,202 (2020), at P 262 (“The Commission has also previously concluded it could not determine whether a project’s contribution to climate change would be significant.”).

tool or methodology, the Commission can consider all factors and determine, quantitatively or qualitatively, whether the Project’s GHG emissions will have a significant impact on climate change. After all, that is precisely what the Commission does in other aspects of its environmental review, where the Commission makes several significance determinations based on subjective assessments of the extent of the Project’s impact on the environment. The Commission’s refusal to similarly analyze the Project’s impact on climate change is arbitrary and capricious.²⁸

Until the Commission actually analyzes the Project’s significance and climate impacts, this DEIS and subsequently-issued EISs will be incomplete, insufficient, inconsistent with the mandates of NEPA and the APA, and will lead to uninformed decision-making under the NGA.

The Commission also notes that staff have not been able to find an established threshold for determining a Project’s significance when compared to established GHG reduction targets at the state or federal level, and that the DEIS is not characterizing the Project’s GHG emissions as significant or insignificant because the Commission is conducting a proceeding to determine whether and how the Commission will conduct significance determinations going forward.²⁹

Quantifying the direct GHG emissions of the Project and merely noting the fact that the Commission is “undertaking a proceeding to identify and finalize and appropriate GHG significance threshold” does not cure the legal issues presented by the Commission’s failure to assess the significance of the Project’s GHG emissions. Essentially, the Commission is saying that it will continue to issue legally deficient EISs because it is still discussing how it should issue legally sufficient ones. If the Commission does not yet know how to assess an impact, the

²⁸ *Jordan Cove Energy Project L.P.*, 170 FERC ¶ 61,202 (2020), at PP 14, 19 (Comm’r Glick, dissenting).

²⁹ See Order on Draft Policy Statements, 178 FERC ¶ 61,197 (2022).

solution is to wait to conduct that assessment until it can, not to continue to process applications under a system that it knows to be unlawful.

When preparing its EISs and reviewing proposed projects under NGA Section 3, the Commission also cannot continue to defer climate analysis to DOE. DEIS at 4-363. This is especially as DOE has disclaimed authority to consider export-induced gas production and other effects occurring upstream of delivery of LNG to an export carrier.³⁰ Commonwealth agrees that the Commission should consider the impact of its proposed project on global GHG emissions in deciding whether to approve the proposed terminal.³¹ The DEIS cannot logically consider Commonwealth's asserted indirect or lifecycle benefits *and* conclude that the no-action alternative could require "potential end users make different arrangements to meet their needs," all while wholly overlooking the Project's corresponding harms. Climate change is real. At this pressing time, where meeting climate targets is imperative to ensuring a livable planet,³² the Commission and DOE simultaneously decline to consider the environmental impacts of the

³⁰ See DOE, Final Rule: National Environmental Policy Act Implementing Procedures, 85 Fed. Reg. 78,197-01, 78,198, 78,201 (Dec. 4, 2020).

³¹ Amendment Application at 5-6, Accession No. 20210708-5004.

³² See, Climate Change 2022: Mitigation of Climate Change, IPCC (Apr. 2022). Available at <https://www.ipcc.ch/report/sixth-assessment-report-working-group-3/>; Fourth National Climate Assessment, U.S. Global Change Research Program, U.S. GLOBAL CHANGE RESEARCH PROGRAM (Nov. 23, 2018). Available at <https://nca2018.globalchange.gov/>. See also Fiona Harvey, IPCC report: 'now or never' if world is to stave off climate disaster, THE GUARDIAN (Apr. 4, 2022), <https://www.theguardian.com/environment/2022/apr/04/ipcc-report-now-or-never-if-world-stave-off-climate-disaster> ("Jim Skea, a professor at Imperial College London and cochair of the working group behind the report, said: 'It's now or never, if we want to limit global warming to 1.5C. Without immediate and deep emissions reductions across all sectors, it will be impossible.'").

authorizations they make.³³ The Commission must consider the global GHG emissions of the Projects it authorizes. Consider CEQ's recent comments on its reversal of changes made under the Trump administration to regulations implementing NEPA:³⁴

CEQ is including direct, indirect, and cumulative effects as part of the definition of “effects” or “impacts” because they have long provided an understandable and effective framework for agencies to consider the effects of their proposed actions in a manner that is understandable to NEPA practitioners and the public. CEQ considers this approach to result in a more practical and easily implementable definition than the 2020 rule’s definition of “effects” that explicitly captures the indirect and cumulative nature of many environmental effects, such as greenhouse gas emissions or habitat fragmentation. Upon further evaluation of the rationale for the 2020 rule and the comments CEQ received on the NPRM, CEQ does not consider the tort law standards of “close causal relationship” and “but for” causation to be ones that provide more clarity or predictability for NEPA practitioners, agency decision makers, or the public. Furthermore, as discussed in this section, CEQ does not consider the existing case law interpreting the 1978 definition of “effects” to require that the NEPA regulations limit agency discretion to identify reasonably foreseeable effects under such a standard. CEQ also is removing the potential limitations on consideration of temporally or geographically removed environmental effects, effects that are a product of a lengthy causal chain, and “effects that the agency has no ability to prevent due to its limited statutory authority or would occur regardless of the proposed action.” These qualifications may unduly limit agency discretion and stating them as categorical rules that limit effects analyses is in tension with NEPA’s directives to produce a detailed statement on the “environmental impact of [a] proposed action,” “any adverse environmental effects which cannot be avoided,” and “the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity.” 42 U.S.C. 4332(2)(C). Furthermore, this language could lead Federal agencies to omit from analysis or disclosure critical categories of reasonably foreseeable effects that are temporally or geographically removed, such as climate effects, frustrating NEPA’s core purpose and Congressional intent.³⁵

³³ NRDC, *Federal Agencies Play Hot Potato on LNG Emissions* (Dec. 2020). Available at <https://www.nrdc.org/experts/gillian-giannetti/federal-agencies-play-hot-potato-lng-emissions>.

³⁴ 87 Fed Reg. 23453.

While in this “Phase One,” CEQ has voiced its intention only to restore and revise NEPA to its pre-2020 language, CEQ (the agency whose interpretation of NEPA is entitled to substantial deference³⁶) has articulated that reliance on tort standards can unduly limit agency discretion to engage in proper effects analyses, notably climate effects.

VII. The Commission’s DEIS fails to take a hard look at impacts to chenier and vegetation, particularly given that the proposed Project will imperil the eastern black rail and other wildlife.

The Commission concludes that Project impacts to cheniers and vegetation would not be significant. DEIS at 5-371, 5-372. As the Commission notes, chenier communities are of special concern in Louisiana. *Id.* Cheniers provide critical environmental services by acting as storm barriers, limiting the intrusion of saltwater and providing critically important stopover sites migratory birds, including the (somewhat-migratory) eastern black rail.³⁷ DEIS at 5-371, 5-372, 5-377. The eastern black rail is a federally-listed species, and per the ESA, triggers consultation responsibilities. The Chenier Plain, which stretches roughly 100 miles from Vermillion Parish to the Texas border, is home to particular populations of the black rail.³⁸ The Project would be located entirely within the Chenier Plain, which is one of Louisiana’s largest Important Bird Areas (IBAs) with wetlands in the IBA being home to over 360 species of birds, including ducks, egrets, geese, rails, raptors, wading birds, and shorebirds. DEIS at 5-373.

The Commission notes that the primary impact of the Project on vegetation (and therefore to wildlife) will be loss of wetlands habitat. DEIS at 4-340. In its cumulative impacts

³⁶ *Andrus v. Sierra Club*, 442 U.S. 347, 358 (1979); *Nat'l Audubon Soc'y*, 422 F.3d at 184.

³⁷ See Barwick, Tristan. *The Secret Lives of Black Rails, and the Scientists Who Seek Them*, AUDUBON.ORG (Feb. 13, 2019). Available at <https://www.audubon.org/news/the-secret-lives-black-rails-and-scientists-who-seek-them>.

³⁸ *Id.*

**UNITED STATES OF AMERICA
DEPARTMENT OF ENERGY
FEDERAL ENERGY REGULATORY COMMISSION**

IN THE MATTER OF)
)
Commonwealth LNG, LLC) Docket No. CP19-502
)

Sierra Club, Audubon Society, Center for Biological Diversity, Louisiana Bucket Brigade,

Micah 6:8 Mission, RESTORE, and Turtle Island Restoration Network

Comments on Draft EIS for the Commonwealth LNG Project

Sierra Club, Audubon Society, Center for Biological Diversity, Louisiana Bucket Brigade, Micah 6:8 Mission, RESTORE, and Turtle Island Restoration Network submit the following comments on the draft environmental impact statement (“DEIS”) for the Commonwealth LNG project. The DEIS fails to consider many impacts of the proposed project, makes unjustifiably optimistic assumptions about others, and fails to rigorously explore alternatives that could reduce these impacts. This project will cause adverse impacts—to the environment, surrounding communities, and the nation as a whole—that render it contrary to the public interest. Thus, while we offer the below comments identifying deficiencies in the NEPA analysis, our position is that FERC and the cooperating agencies relying on FERC’s EIS should reject the pending applications.

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I. Facility Output

The Draft EIS states that “The Project would produce 8.4 million metric tonnes per annum (MTPA) of LNG for export.” DEIS ES-1. But Commonwealth’s application materials reveal that Commonwealth expects the facility to actually be capable of producing more than this, roughly 9.5 MTPA.¹ Commonwealth has requested that the Department of Energy (“DOE”) authorize this higher volume of exports.² And as FERC is aware, LNG export terminals routinely come back to FERC and request an increase in authorized operations to match peak, rather than purportedly nominal, export volumes. As such, operation of the facility at this 9.5 MTPA volume is a reasonably foreseeable future action or effect, if not a connected action, and must be considered now.

FERC should clarify and/or more clearly demonstrate that the DEIS considers this higher level of operation. We appreciate the DEIS’s acknowledgment of our prior comment on this issue, and the statement that “the modeled emissions output presented [in the DEIS] assume the

¹ See, e.g., DEIS at 4-295, 5-394.

² <https://www.energy.gov/fecm/articles/commonwealth-lng-llc-fe-dkt-no-19-134-lng>.

Terminal would be operating at full capacity.” DEIS 4-199 to 4-200.³ However, we note that in prior dockets, FERC has assumed that increasing liquefaction volumes will not increase emissions because such an increase occurs when liquefaction units operate more efficiently, by producing more LNG for the same intensity of operations and emissions. It is unclear whether FERC has made a similar assumption here—i.e., whether the DEIS is assuming that emissions would be the same if 8.4 or 9.5 MTPA of LNG are produced. Such an assumption would be inappropriate. Even where liquefaction equipment operates more efficiently to increase output without increasing emissions from that equipment, increasing output necessarily increases emissions from other sources, such as pretreatment of feed gas—when more gas is liquefied, there is more feed gas, and thus more impurities, that must be removed, regardless of how efficiently the liquefaction equipment runs. Similarly, increasing LNG output and exports necessarily requires additional marine vessel traffic. The DEIS assumes “156 LNG carrier calls per year.” DEIS 4-202. FERC should clarify what volume of gas could be transported by this amount of carrier traffic, and provide additional detail about the size and characteristics of the carriers used in estimating carrier emissions.

More broadly, the DEIS does not explain how *any* operational emission estimates were calculated, and does not contain an appendix or any apparent citation to some other document in the docket explaining where this information can be found. Without this information, we are unable to comment on the validity or appropriateness of the DEIS’s emission estimates.

II. Alternatives

A. No Action

FERC cannot argue that if the Commonwealth project is rejected, some comparable project would take its place. In discussing the no action alternative, the DEIS states:

Independent of whether the Project is constructed, other LNG export projects may still be developed in the Gulf Coast region or elsewhere in the United States and these projects would cause both adverse and beneficial impacts on the environment. Terminal and

³ *Accord* DEIS at 4-216, -217, -220

pipeline projects of similar scope and magnitude to this Project would likely result in environmental impacts of comparable significance, especially those projects in a similar regional setting.

DEIS 3-26. First, other LNG projects also require FERC approval. Thus, insofar as FERC concludes that this or any other LNG project is contrary to the public interest, FERC has the power to deny the project and thereby prevent harm to the public. FERC cannot contend that LNG exports are inevitable, and that denying this project would merely divert demand to some substitute facility.

Second, there is no support for FERC's claim that other projects would have "environmental impacts of comparable significance." DEIS 3-26. FERC entirely fails to compare this project to any other project, much less to demonstrate that the environmental impacts are in fact comparable. There is no reason to assume that they are; as we discuss below, different LNG designs have different environmental impacts, depending on the facility site, whether the project is greenfield or brownfield, the liquefaction technology used, the community setting, *etc.* While the undersigned contend that all of the proposed export projects are contrary to the public interest, insofar as exports are to occur at all, part of FERC's job should be to decide which export projects do the least harm to the public interest, rather than simply leaving it to "market forces [to] ultimately decide which and how many of these facilities are built." DEIS 3-27. FERC has entirely abdicated that responsibility here, and FERC provides no support for its suggestion that choosing the no action alternative here would simply shift demand to a comparably harmful project that might not otherwise be built.

B. System Alternatives

NEPA requires FERC to rigorously explore all feasible alternatives. Here, the DEIS fails to demonstrate that it would be infeasible to use capacity at existing or already approved export facilities in lieu of construction of the proposed Commonwealth terminal. The DEIS's conclusion that no such terminal has available additional capacity is arbitrary.

One type of alternative identified in FERC's Guidance Manual for Environmental Report Preparation are "system alternatives."⁴ As the manual explains:

System alternatives are those that would meet the objectives of the project, but would use a different (and often existing) natural gas facility/pipeline system or a different configuration of facilities that would eliminate the need to construct all or part of the project. If modifications or additions to the existing facilities/systems would be required to meet the project objectives, you should quantify the environmental impact of these modifications for comparison with those of the proposed project.

System alternatives should include alternative configurations both on your own system and on one or more other companies' facilities.

Examples of ... alternatives using other companies' facilities[] should include an examination of the current capacities of existing systems, to the extent this information is available, and an assessment of these systems' ability to individually or in combination meet the objectives of the proposed project. If the existing systems are inadequate, you should examine whether any recently proposed facilities are able to individually or in combination meet the objectives of the proposed project. If these recently proposed facilities are also inadequate, you should examine what new facilities one or more companies would likely need to construct to achieve the objectives of the proposed project.

Manual at 4-136. Implicit in the requirement to evaluate system alternatives is the understanding that the public and the environment benefit when infrastructure is fully utilized, and that it is better to build one fully-used project than two partially-used ones.

Here, the DEIS identifies 24 potential system alternatives. DEIS 3-28 to -29. These include 19 "approved, proposed, and/or planned expansion(s)", and 13 projects that have been approved but that have not yet started construction. *Id.* It is our understanding that many of these projects, including all of the projects that have not started construction, are not fully subscribed and have uncontracted-for capacity. Thus, if Commonwealth LNG were to secure customers,

⁴ FERC, Guidance Manual for Environmental Report Preparation, at 4-136 (Feb. 2017), available at <https://www.ferc.gov/sites/default/files/2020-04/guidance-manual-volume-1.pdf>.

those customers' needs could instead be met by one or more of these system alternatives, alone or in combination.⁵

However, rather than investigate reasonably foreseeable utilization or availability of these system alternatives (including a discussion of actual contracts), FERC categorically assumes that there is not any capacity on any of them, based solely on the fact that each has applied for or received DOE authorization to export to Free Trade Agreement (FTA) countries. DEIS at 3-29. Under this approach, FERC will *never* conclude that there is a feasible system alternative for *any* proposed LNG export terminal, because *all* such projects *always* seek FTA authorization for their full capacity. This effectively renders the manual's instruction to consider system alternatives a nullity for LNG export facilities. And it is arbitrary for FERC to assume that an alternative is infeasible solely because that alternative has applied for or received a separate FTA export authorization. At most, the Natural Gas Act's requirement that DOE automatically approve exports to FTA countries indicates that, *where such exports actually occur*, those exports provide benefits that are in the public interest. But nothing in the Natural Gas Act or NEPA requires or even permits FERC to assume that all approved FTA exports will in fact occur. And in other contexts, both FERC and DOE have candidly acknowledged that many of these projects do not have, and may not ever otherwise develop, agreements for their full capacity. We are not asking FERC to "speculate," DEIS at 3-29, about the availability of capacity at potential system alternatives: we are instead calling on FERC to engage in a reasonable investigation and forecasting, based on concrete information such as the presence or absence of contracts for these other facilities—exactly the type of inquiry FERC purports to require for pipeline proposals.

It is arbitrary for the DEIS to conclude that the existence of FTA applications or authorizations for these other terminals renders system alternatives that would use already-approved projects unavailable or infeasible. The DEIS provides no other analysis or justification

⁵ We agree with the DEIS's implicit rejection of Commonwealth's argument that a system alternative is only feasible if it would provide the entire desired capacity at a single additional terminal. See Protest of Sierra Club *et al.*, Accession 20210803-5303 at 6-8 (criticizing this argument). As the manual explicitly states, a viable system alternative may consist of using other facilities "in combination" to meet the proposed project's objectives. FERC, *Guidance Manual for Environmental Report Preparation*, at 4-136.

for rejecting such system alternatives. Accordingly, the DEIS fails to rigorously explore potential system alternatives.

C. Design Alternatives

The DEIS fails to justify rejecting three design alternatives previously identified by Sierra Club *et al.*: (1) using fewer, larger storage tanks than originally proposed, (2) using more efficient liquefaction units, and (3) adding waste heat recovery units/using combined cycle processes for on-site power generation. In addition, as discussed separately below, the DEIS fails to take the required hard look at alternatives utilizing carbon capture and sequestration.

On the first, Commonwealth initially proposed a facility with 240,000 cubic meters of storage tank capacity, to be provided by six 40,000 m³ tanks. After Commonwealth proposed increasing the size of these tanks to 50,000 m³, Sierra Club *et al.* proposed omitting one of the tanks, which would still provide more storage capacity than was originally proposed while also allowing Commonwealth to reduce the facility footprint. In dismissing this alternative, the DEIS first notes that increasing the size of individual tanks did not increase the overall facility footprint. But ‘not worse than what the applicant initially proposed’ cannot be the standard by which FERC determines whether environmental impacts are significant, contrary to the public interest, or justified. If it was, applicants would be incentivized to formulate their initial proposals to be as damaging or inefficient as possible. FERC has an obligation to rigorously explore whether modifications to the proposed design would reduce impacts and further the public interest, 15 U.S.C. 717b(e)(3)(A), and this doesn’t merely mean rejecting alternatives that would make impacts worse—it also means affirmatively investigating opportunities to make things better. FERC’s alternative ground for rejecting this change is to speculate that reducing storage from 300,000 to 250,000 m³ (still more than the 240,000 m³ initially proposed) might require additional startups and shutdowns of liquefaction equipment, presumably if the Calcasieu Ship Channel is closed to vessel traffic for so long that the liquefaction units entirely fill the available storage without an opportunity to load a ship. DEIS 3-43. But merely speculating about a potential environmental drawback of an alternative is not the same thing as rigorously exploring that alternative. FERC offers no discussion whatsoever of how often the ship channel closes, how long such closures last, how often such a closure might result in a shutdown and

later restart of the liquefaction units, and if the closure would be long enough to require a shutdown, whether the shutdown would have occurred anyway (if, for example, the weather that shuts down the channel would have required shutting down the terminal anyway). Even if omitting one storage tank *would* foreseeably require some additional shutdowns, such that there is, to some degree, a design tradeoff between acres impacted and potential air impacts, the point of NEPA is to shine a light on those tradeoffs and inform the public and decisionmakers about their consequences. Merely speculating that an alternative might increase air emissions by some unspecified amount does not justify rejection of that alternative.

On the second issue, Commonwealth proposes liquefaction units using the “AP-SMR” process provided by Air Products and Chemicals. Air Products and Chemicals offers an alternative process, C3MR, that Air Products and Chemicals itself identifies as more efficient and as suitable for the volumes proposed here, both in terms of individual liquefaction trains and overall facility capacity, as Sierra Club *et al.* previously explained.⁶

The DEIS’s basis for rejecting this process is nonsensical. The DEIS absurdly asserts that this argument “misunderstand[s] … the definition of efficiency in this context. The added efficiency between the two processes does not result in a reduction in emissions; rather, the increased efficiency allows for greater liquefaction capacity.” DEIS 3-44. Reduced emissions and greater capacity are two sides of the same coin: if each train has a higher capacity but the same emissions, then fewer trains can be used to produce the same amount of LNG, reducing overall emissions. Moreover, this argument is not supported by *any* data about the different liquefaction designs’ actual emissions for any given size or output.

The DEIS is similarly completely devoid of information in asserting that “the C3MR process requires a substantially larger footprint.” DEIS 3-44. Nothing indicates how many acres would be required for C3MR trains capable of producing the 9.5 MTPA peak capacity proposed here, or whether the existing terminal site could accommodate such a footprint. The Cove Point facility is authorized to produce up to 5.75 MTPA using C3MR trains with liquefaction facilities that occupy only 59.5 acres.⁷ Even if using C3MR trains would take more space than the

⁶ Accession 20210803-5303 at 9-11.

⁷ Environmental Assessment for the Cove Point Project, Accession 20140515-4002, at 1, 8, 76.

proposed SMR trains, nothing in the EA demonstrates that such an increased liquefaction footprint could not still fit within the overall terminal boundary, especially if one of the six storage tanks is also omitted. (We also note that the DEIS does not clearly explain what, if anything, will be sited in the large area between the liquefaction units and storage tanks, beyond a small impoundment. DEIS 2-3). And even using C3MR trains would require expanding the overall terminal footprint, the DEIS does not even assert, much less demonstrate, that such an expansion would be infeasible, and it fails to rigorously explore the benefits and drawbacks of such an expansion. DEIS 3-44. This failure is galling in that it is the inverse of the DEIS's treatment of storage tanks: for tanks, the DEIS implicitly concludes that avoiding air pollution is more important than shrinking the terminal footprint, but for liquefaction design, the DEIS prioritizes a small footprint over reducing air emissions. The DEIS's failure to provide *any* data about the relative magnitude of the impacts to land, wetlands, or emissions from any of these alternatives would be arbitrary in any event, but it is especially inappropriate where the DEIS appears to treat these issues differently. The only apparent explanation for this disparate treatment of environmental resources appears to be that in each instance, the DEIS rubber-stamps the design the developer requested.

Third, independent of whether C3MR or SMR liquefaction designs are used, the same volume of LNG can be produced with lower emissions by using additional waste heat recovery. The proposed design includes nine simple cycle gas combustion turbines: one for each of the six liquefaction units, DEIS 4-199, and three at the on-site simple-cycle power plant, producing approximately 120 megawatts, DEIS 2-6, 4-239. Emissions could be reduced by replacing some or all of these units with combined cycle units or otherwise implementing additional waste heat recovery. A recent industry analysis concluded that powering liquefaction units with combined cycle turbines “can significantly reduce CO₂ emissions by reducing the required fuel demand. A plant that uses combined cycle can avoid approximately 25% of CO₂ emissions associated with the base case.”⁸ Similarly, a combined cycle powerplant could produce the required 120

⁸ Dejan Veskovic et al, Decarbonized LNG Production via Integrated Hydrogen Fueled Power Generation, Gastech Technical Conference, at 4 (Sept. 21-23 2021) (hereinafter “Veskovic, Decarbonized LNG Production”), available at <https://www.airproducts.com/-/media/236f4bc68940481cb5cf5afef8e589b6.ashx> and attached.

megawatts of on-site power with lower emissions. The DEIS claims that a combined cycle plant capable of generating 500 megawatts, sufficient to power liquefaction units with electricity rather than with gas directly, would take 100 acres, but the DEIS ignores the self-evident possibility of using a combined cycle plant solely to meet the purported 120 megawatts of on-site power need.⁹ FERC has not explained what the footprint of such a unit would be, how much bigger this is than the proposed simple-cycle electric generating units, whether the terminal can accommodate the extra space, and if an expanded footprint would be required, what the impact on wetlands would be, and by how much air emissions would be reduced in exchange.

One particular way to integrate additional waste heat recovery was illustrated by Jordan Cove's 2017 application. Like Commonwealth, Jordan Cove proposed to use single mixed refrigerant liquefaction units, of comparable size (1.56 mtpa there, vs. 1.58 peak capacity here), also powered by associated gas turbines, and also using some waste heat from liquefaction turbines as part of the gas pretreatment facility.¹⁰ However, Jordan Cove's application also proposed to meet on-site electric needs, of roughly 50 megawatts, by routing additional waste heat from the liquefaction unit's gas turbines to a series of on-site 30-megawatt steam generating turbines, each of which would occupy only 3,150 square feet, or 0.072 acres.¹¹ Thus, even if energy from the six liquefaction turbines' waste heat cannot be used to power liquefaction itself, this energy can reduce or eliminate the need for on-site electrical generation, and both the emissions and footprint associated therewith.

⁹ Sierra Club *et al.* identified this issue in their protest, Accession 20210803-5303 at 12-13, which identified other nearby facilities using combined cycle units on this smaller scale for on-site power. But even if Sierra Club had not previously identified this alternative, FERC would be required to consider it now.

¹⁰ Jordan Cove Energy Project, Resource Report 1 at 20 (Sept. 21, 2017), Accession 2017092105142 (describing liquefaction units), *id.* at 28 (waste heat used in part for gas "conditioning"), *id.* at 19 (explaining that conditioning is the pretreatment, *i.e.*, removal of impurities)

¹¹ *Id.* at RR1-32, RR1-40.

D. Site Alternatives

1. Alternative Terminal Sites

The DEIS also improperly rejects numerous site alternatives. The DEIS analyzed eight alternative sites for the terminal facility all of which met the following criteria: (1) site has a minimum of 200 acres, (2) the surrounding land is compatible for construction of an LNG terminal, (3) site has waterfront access sufficient to construct a berth for LNG carriers with a minimum of 1,500 feet of shoreline, (4) site is adjacent to a navigational channel deep enough to accommodate LNG carriers with a depth of 40 feet, (5) navigational channel within the proximity of the site is wide enough to accommodate a turning basin, (6) site has reasonably close access to a natural gas supply, (7) site has reasonable proximity to utilities, and (8) site has suitable road and highway access.¹² Of the eight sites, only two are purportedly commercially unavailable, whether for purchase or lease.¹³ The DEIS fails to rigorously explore the available sites, or to justify their rejection.

One way in which the DEIS's treatment of site alternatives was flawed was discussion of species impacts. For example, the DEIS fails to support its conclusion that alternative sites would not benefit the Eastern Black Rail ("EBR"). As the DEIS admits, no threatened and endangered species consultation has been conducted for alternative sites. DEIS, 3-30. The DEIS "an unofficial inquiry of the FWS's Information for Planning and Consultation [IPaC] online system indicates protected species may be present at all eight of the alternative sites, including the potential for presence of the eastern black rail at six of the eight alternative sites." DEIS, 3-30. But this is a misuse of the IPaC system, as the system's documentation makes plain. The IPaC system is not intended to be used as biological evidence of a species presence at a particular site. As the IPaC website makes clear, "it is for informational purposes only and does not constitute an analysis of project level impacts."¹⁴ It is also not an official species list.¹⁵ It is an

¹² DEIS at 3-29.

¹³ DEIS at 3-38, 3-39.

¹⁴ USFWS, IPaC Information for Planning and Consultation, at [IPaC: Home \(fws.gov\)](http://IPaC: Home (fws.gov)).

¹⁵ *Id.*

informational tool and by no means is it a substitute for consultation under the Endangered Species Act (ESA). Therefore, it appears likely that one or more alternative sites would reduce impacts of the eastern black rail, and the DEIS's suggestion to the contrary is unsupported. A hard look at the benefits and drawbacks of site alternatives requires a more careful look at whether the feasible alternative sites would reduce impacts to the eastern black rail.

Similarly, at least one alternative site, site 5, would reduce impacts to wetlands and eliminate impacts to cheniers and other important non-wetland ecological features.¹⁶ On the other hand, the DEIS provides an unsupported reason for rejecting site 5. The DEIS argues that site 5 is close to a community center and local park, the DEIS does not acknowledge the proposed site's proximity to Holly Beach. Both sites would therefore impact the local community, and the DEIS fails to demonstrate that site 5 would have a *greater* impact.

The DEIS argues that the proposed site has various other advantages, including "the shortest transit from the Gulf of Mexico, thus reducing impacts from vessel traffic; and the least amount of dredging, reducing impacts on surface water and aquatic resources."¹⁷ We agree that these are important factors to consider. But NEPA and the Natural Gas Act require FERC to balance all impacts in evaluating alternatives, and here, the DEIS fails to analyze whether, for example, the reduced dredging provided by the proposed site is a greater or lesser boon than the reduced wetland and chenier impact at site 5.

2. Alternative Pipeline Sites and Routes

The DEIS fails to rigorously explore alternative pipeline routes, including, in particular, route 4, which was recommended by The Louisiana Department of Wildlife and Fisheries. The proposed pipeline would be three miles long and is not collocated with existing rights-of-way at all. DEIS 3-48. Route 4, on the other hand, would be co-located for 2.6 miles but would increase total pipeline length by only 0.1 miles, thereby avoiding 2.5 miles of new right-of-way (an 83% reduction in new right-of-way relative to the proposed route).¹⁸ In rejecting this alternative, the

¹⁶ DEIS at 3-37, 3-38, 3-41.

¹⁷ DEIS at 3-43.

¹⁸ DEIS at 3-49.

DIES points to the increase in pipeline length, and the fact that it would increase temporary (but not permanent) impacts to wetlands by 0.03 miles. DEIS 3-49. The DEIS fails to explain why these drawbacks are not de minimus, especially in light of the drastic reduction in new right-of-way, and the DEIS fails to grapple with Louisiana Department of Wildlife and Fisheries' reasons for recommending this route or to explain FERC's disagreement therewith.

The DEIS also apparently erred by separating its discussion of alternative pipeline routes from discussion of alternatives to ancillary aboveground pipeline facilities, including two interconnection facilities at the Kinetica and Bridgeline pipelines, one pig launcher, and one-meter station.¹⁹ The DEIS states that no alternative sites for these facilities were identified. DEIS 3-49. Adopting an alternative pipeline route would generally require moving these facilities, *see* DEIS 3-47 (map of alternative routes), but it is unclear whether aboveground facilities were included in the analysis of alternative pipeline routes.

III. Greenhouse Gas Emissions

As courts have repeatedly held, FERC must take a hard look at the project's greenhouse gas (GHG) emissions, including reasonably foreseeable indirect effects. As with other LNG projects, here, FERC continues to take an unlawfully narrow view of the scope of greenhouse gas emissions FERC must consider, refusing to provide any discussion or analysis of the impact of producing, transporting, or using the gas that would be exported by the Commonwealth project. But even for those emissions that FERC admits are within its scope, FERC unlawfully refuses to provide the public or decisionmakers with the required analysis of the significance, severity, or impact of those emissions. FERC also fails to justify rejection of alternatives that would reduce direct emissions using carbon capture and sequestration. And finally, FERC's analysis of direct emissions is further flawed by FERC's continued reliance on outdated estimates of the impact of methane and other greenhouse gases other than carbon dioxide.

¹⁹ DEIS at 3-49; *see also* DEIS 2-4 (map of these facilities).

Thus, information about indirect effects informs FERC's decisionmaking, notwithstanding FERC's lack of "authority to prevent" those effects. *Freeport*, 827 F.3d at 49.

Second, the agencies and public would benefit from comprehensive analysis of the impacts of all related projects. Specifically regarding the connection between FERC and DOE, *Freeport* explicitly declined to consider whether the prohibition on segmentation, or FERC's Natural Gas Act obligation to act as lead agency, required FERC to consider upstream and downstream effects in the NEPA analysis. 827 F.3d at 45. Nor has the D.C. Circuit addressed these questions in any other case. The reasoning of these cases does not support an exception to the prohibition on segmentation here. *Freeport* rests on *Department of Transportation v. Public Citizen*, which affirmed a "rule of reason" under which an EIS only needs to include information "useful[] . . . to the decisionmaking process." 541 U.S. 752, 767 (2004). The prohibition on segmentation recognizes the usefulness of a "comprehensive approach," *Del. Riverkeeper*, 753 F.3d at 1314, rather than dividing analysis of an "integrated project" across multiple documents and processes. *City of Boston Delegation v. FERC*, 897 F.3d 241, 251-52 (D.C. Cir. 2018) ("*City of Boston*"). Here, comprehensive analysis in a single EIS would inform each agency's decisionmaking regarding matters squarely within its own jurisdiction.

In other proceedings, FERC has argued that segmentation caselaw, connected action regulation, etc., do not apply to actions of multiple agencies. The D.C. Circuit, in one of the cases that developed the segmentation doctrine that was later codified in the 1978 NEPA regulations, has explicitly rejected this, holding that "the principles" of the prohibition on segmentation "are entirely applicable . . . where decision-making is accomplished by three federal agencies . . . acting seriatim." *Jones v. D.C. Redevelopment Land Agency*, 499 F.2d 502, 510 (D.C. Cir. 1974); see also *Sierra Club v. U.S. Army Corps of Engineers*, 803 F.3d 31, 49-51 (D.C. Cir. 2015) (assuming that the connected actions regulation applies to actions of multiple agencies).

For these reasons, even if *Freeport* is not overruled, FERC is still required to consider indirect effects, both to inform FERC's own decisionmaking regarding the cumulative impact of matters that FERC *does* have authority to regulate, and to inform DOE's consideration of the connected, interdependent proposal to export the gas liquefied at the terminal.

And finally, even if FERC is correct that it is not *required* to analyze lifecycle emissions in its NEPA analysis, nothing in *Freeport* or the related D.C. Circuit decisions *prohibits* FERC from doing so, as EPA observes.²⁵ Providing discussion and analysis of what EPA agreed are “these patently foreseeable environmental impacts” in FERC’s NEPA analysis will undoubtedly help inform both the public and other agencies of the big picture, and FERC should choose to provide this analysis here.

B. Direct GHG Emissions

The DEIS estimates that, even within the unlawfully narrow scope of emissions that FERC admits it must consider, operation of the Commonwealth LNG project will result in nearly four million tons per year of carbon dioxide equivalent (CO₂e). DEIS at 4-362. The DEIS’s refusal to provide any analysis or express any judgment regarding the severity or significance of those impacts is arbitrary. FERC also failed to take a hard look at reducing these emissions through carbon capture and sequestration (“CCS”), or even to explain whether or not FERC agreed with Commonwealth’s assertion that CCS was infeasible here. And FERC once again relies on long-ago superseded estimates of the global warming potential of many greenhouse gases.

1. The DEIS Fails to Evaluate the Severity, Significance, or Impact of GHG Emissions

NEPA and the Natural Gas Act require that FERC take a hard look at the impact of greenhouse gas emissions, evaluate their significance and impact, and ultimately, to factor these emissions into FERC’s public interest determination. *Sierra Club v. FERC*, 867 F.3d 1357, 1376 (D.C. Cir. 2017) (“*Sabal Trail*”). But here, FERC explicitly refuses to provide these analyses. The DEIS repeatedly asserts that FERC will not “characterize[e] the Project’s GHG emissions as significant or insignificant because the Commission is conducting a generic proceeding to determine whether and how the Commission will conduct significance determinations going forward.” DEIS at ES-10-11, 4-355, 4-363, 5-385. But an aspiration to comply with the law

²⁵ EPA, Comments in Dkt. PL21-3, at pdf page 6, Accession 20220425-5440.

when reviewing unrelated future projects is not an excuse for failing to comply with the law now.

If FERC is uncomfortable with or unwilling to apply the interim/draft policy, there are, of course, other ways to assess significance. One of those remains the social cost of greenhouse gases. In the DEIS, FERC makes no mention of this tool. Elsewhere, FERC has “not[ed] the pending litigation challenging federal agencies’ use” of the tool.²⁶ However, the Fifth Circuit has explicitly permitted agencies to use this tool pending resolution of this litigation, staying the injunction that was previously entered, *Louisiana by & through Landry v. Biden*, No. 22-30087, 2022 WL 866282 (5th Cir. Mar. 16, 2022), and ultimately, these legal challenges are likely to fail. The unlikely possibility of a future adverse ruling in this litigation is not an excuse for not complying with the cases that have already been decided and that require FERC to do more.

Alternatively, FERC has argued that “it has not determined which, if any, modifications are needed to render [social cost of greenhouse gases] useful for project-level analyses.”²⁷ FERC does not claim to have actually concluded that the tool is inappropriate for project-level analysis. And again, FERC’s suggestion that it will do better next time does not justify its decision to not use the available tools for *this Project*. Sierra Club contends that the social cost of greenhouse gases *is* an appropriate tool for project level analysis, and as FERC has recognized, other agencies in fact use this tool in project-specific reviews.²⁸ And while CEQ is working “to review, revise, and update its 2016” GHG guidance, CEQ has encouraged agencies to comply with the 2016 guidance pending revision.²⁹ The 2016 GHG Guidance identifies social cost of carbon as “a harmonized, interagency metric that can give decision makers and the public useful

²⁶ *Evangeline Pass Expansion Project*, 178 FERC ¶ 61,199 P92 (Mar. 25, 2022).

²⁷ *Evangeline Pass Expansion Project*, 178 FERC ¶ 61,199 P92 n. 141 (Mar. 25, 2022).

²⁸ See *Mountain Valley Pipeline, LLC Equitrans, L.P.*, 163 FERC ¶ 61,197 P281 n.772 (2018) (recognizing that BOEM, OSM, DOE, and numerous state agencies have used social cost of carbon in environmental review of individual projects). In that order, FERC suggested that greenhouse gas emissions were primarily a problem for agencies that regulate production or use of fossil fuels. But the direct emissions at issue here are exactly that: emissions that result from use of fossil fuels in FERC-jurisdictional compressor stations and other facilities.

²⁹ See Accession 20210527-5009.

information for their NEPA review.”³⁰ FERC has not identified any CEQ statement stating that social cost of GHGs is, or may be, inappropriate for project-specific review. If FERC actually believes social cost of GHGs is inappropriate for project-specific review, FERC can articulate that position in the record and in its NEPA review. But FERC cannot conclude that the project is in the public interest and thereby approve the project while refusing to provide decisionmakers and the public with the analysis and conclusions that are the required predicates for that approval, including NEPA and Natural Gas Act analysis of greenhouse gas emissions.

Finally, FERC’s comparison of direct project emissions with emissions of the United States or Louisiana is not, and does not purport to be, an analysis of significance or of the impact of emissions on the public interest. DEIS at 4-363. Observing that emissions here are a small portion of regional or national totals does not illustrate their impact. *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1217 (9th Cir. 2008). Even a “very small portion” of a “gargantuan source of … pollution” may “constitute[] a gargantuan source of … pollution on its own terms.” *Sw. Elec. Power Co. v. EPA*, 920 F.3d 999, 1032 (5th Cir. 2019). Furthermore, the DEIS’s analysis of GHG emissions emphasizes the significance of the Project’s contribution to Louisiana’s projected GHG emissions levels and its net-zero GHG emissions by 2050 target. DEIS at 4-363. Direct emissions from the operation of the Commonwealth Project would result in CO₂e emissions of about 3,728,015 tpy, which would represent 2.3 percent and 3.3 percent of Louisiana’s 2025 and 2030 projected GHG emission levels. *Id.* Given the lifespan of this project, its contributions to state GHG emissions would only grow over the remaining years.

The DEIS has not presented evidence that there is no information or methodology FERC could use to evaluate the significance and impact of greenhouse gases—only that FERC hasn’t yet decided how to use the available information and tools. But if FERC were to argue that information was unavailable, FERC would be in the same position recently considered by the D.C. Circuit in *Vecinos*. FERC would need to address whether the Interagency Working Group’s estimates of social cost of greenhouse gases are “generally accepted in the scientific community”

³⁰ https://ceq.doe.gov/docs/ceq-regulations-and-guidance/nepa_final_ghg_guidance.pdf at 33 n.86.

(they are) and if so employ this tool, or use some other generally accepted method. 40 C.F.R. § 1502.21(c)(4); *Vecinos*, 6 F.4th at 1329.

2. Carbon Capture and Sequestration

NEPA requires FERC to take a hard look at opportunities to mitigate impacts, including greenhouse gas emissions. The Natural Gas Act similarly requires FERC to determine whether modifications to the proposed project would better serve the public interest. Here, one way to mitigate greenhouse gas emissions would be to use a more efficient facility design to avoid emissions in the first place, as discussed above. But another way to mitigate emissions (which can be used in addition to or instead of design alternatives) is carbon capture and sequestration, as applied to all or part of the terminal emissions. Although there are serious questions about the appropriateness of carbon capture and sequestration, the DEIS fails to grapple with those questions, and falls far short of NEPA's requirements.

To be clear on one threshold issue: FERC has the authority to require project modifications that would reduce greenhouse gas emissions, including carbon capture and sequestration, regardless of the fact that "*Commonwealth has not proposed* to implement carbon capture technologies." DEIS 4-364 (emphasis added). To inform FERC's decisionmaking regarding whether, and if so to what extent, exercise that authority and to require carbon capture, NEPA requires that FERC rigorously explore alternatives that would incorporate this technology, regardless of whether Commonwealth chooses to propose it.

The DEIS entirely fails to explain whether *FERC* believes that carbon capture and sequestration is economically and technologically feasible here, and if so, whether it would be environmentally beneficial and appropriate. The DEIS notes that *Commonwealth* takes the position that carbon capture and sequestration is infeasible, DEIS at 4-363 to -364, but as the DEIS notes, Commonwealth's position is in clear tension with the fact that other LNG facilities that *have* proposed CCS. Inexplicably, the DEIS makes no attempt whatsoever to resolve this tension.

In particular, the DEIS does not indicate whether it agrees with Commonwealth's assertion that CCS is technically infeasible. The DEIS summarizes a 2017 DOE report (itself

cited by Commonwealth) as concluding that CCS for natural gas systems “ha[s] been proven technically feasible.” DEIS 4-364.³¹ Commonwealth apparently concedes that as a general matter, but contends that CCS is nonetheless technically infeasible for this particular project, “primarily due to a lack of sequestration infrastructure.” DEIS 4-364. The DEIS does not provide any facts to support this assertion. It does not explain why available infrastructure is insufficient; how the infrastructure at this site differs from that available to nearby facilities, such as Venture Global CP2, that *do* propose CCS; or (insofar as additional infrastructure is in fact needed) what it would take to provide that infrastructure. Accordingly, while it is unclear whether FERC agrees with Commonwealth’s assertion that CCS is technically infeasible, it is clear that FERC *shouldn’t*, and that the DEIS does not support Commonwealth’s assertion.

As to economic feasibility, although DOE’s 2017 report asserted that “carbon capture technologies appropriate for natural gas systems … are too expensive to deploy *across the energy sector*,” that assertion did not entail the conclusion that CCS is too expensive to deploy *at any particular LNG facility*, especially as such facilities face very different economics than power plants.³² And now, five years after DOE’s report, multiple other LNG facilities have proposed CCS, indicating that CCS is *not* economically infeasible for LNG terminals, at least in all instances. But the DEIS offers no explanation as to why a mitigation strategy that is affordable for other facilities is impossible for this project.

³¹ See DEIS H-13 (citing U.S. DOE, Carbon Capture Opportunities for Natural Gas Fired Power Systems (2017)). The URL provided in the DEIS,

<https://www.energy.gov/fecm/downloads/carbon-capture-opportunities-natural-gas-fired-power-systems>, was not publicly accessible at the time of this writing. It appears that the same document is also available at

https://www.energy.gov/sites/prod/files/2017/01/f34/Carbon%20Capture%20Opportunities%20or%20Natural%20Gas%20Fired%20Power%20Systems_0.pdf and attached.

³² The DEIS repeats DOE’s 2017 assertion, untethered from actual dollar amounts, that the “capital and operating costs” of CCS for gas facilities “are too expensive when compared to the limited revenue generating applications for captured CO₂ that are currently available.” DEIS 4-364. Again, to be clear, FERC can require CCS even if CCS itself is unprofitable, or even quite costly, just as FERC requires other expenses aimed at reducing environmental impacts. Here, FERC provides no analysis of how much, on net, it would cost to reduce each ton of greenhouse gas emissions, nor any discussion of whether those costs would be warranted. And whatever the costs were in 2017, other facilities have found the costs to be bearable now.

Finally, even if FERC were to conclude, on the basis of some future NEPA analysis, that it was infeasible to capture *combustion* emissions from the Commonwealth facility, FERC would need to consider capture and sequestration of *pretreatment* emissions. From an engineering and economic perspective, much of the hard part of carbon capture is isolating carbon dioxide. But here, as with other LNG facilities, Commonwealth already proposes an amine-based absorber system that is essentially equivalent to that used for carbon capture, used here as part of pipeline pretreatment. DEIS 4-236. Pretreatment produces a nearly-pure CO₂ stream that is amenable to capture, and capturing these emission does not require many of the added capital and operating expenses that DOE suggested were unbearable in 2017. DOE's 2017 report did not consider this issue.

In summary, the DEIS fails to even take a position as to whether some level of CCS would be feasible for the Commonwealth project. And while the undersigned contend that the project would be contrary to the public interest with or without CCS and should be denied, our position is that if FERC does approve the project, FERC must ensure that adverse impacts are reduced as much as possible. This requires a rigorous exploration of whether CCS is feasible here, including whether carbon can safely be sequestered in this region. If CCS is feasible, FERC must explore whether the benefits of CCS outweigh the potential drawbacks, such the impact of increased water intake and discharge.³³ These are serious questions, but the DEIS does not even attempt to answer them, and as such, the DEIS falls short of what NEPA requires.

3. The DEIS Uses Outdated Global Warming Potentials That Understate the Impact of GHG Emissions

The figures provided in the DEIS underestimate emissions by using outdated estimates of the potency of greenhouse gases (GHGs) other than carbon dioxide. The DEIS addresses these other GHGs by converting them to CO₂e. DEIS 4-189. However, the conversion factor (global

³³ National Energy Technology Laboratory, *Cost and Performance Baseline for Fossil Fuel Energy Plants Vol. 1: Bituminous Coal and Natural Gas to Electricity*, NETL-PUB-22638, at 527 (Sept. 24, 2019) (hereinafter “NETL 2019”) (estimating that 90% capture at a combined cycle gas plant increases water intake by 60% and water discharge by more than 150%), available at https://netl.doe.gov/projects/files/CostAndPerformanceBaselineForFossilEnergyPlantsVol1BitumCoalAndNGtoElectBBRRev4-1_092419.pdf and attached.

information,” 40 C.F.R. R. § 1500.1(b), and provide “full and fair discussion of significant environmental impacts,” 40 C.F.R. § 1502.1, by relying on an estimate of methane’s impacts that was known to be outdated and an understatement of the true potency of this pollutant, by failing to disclose that the analysis it provided only considered the long term (100-year) impacts, and by failing to use available tools, such as the estimate of methane’s 20-year GWP, to address more near-term impacts. Each of these failures violates NEPA. *See W. Org. of Res. Councils v. U.S. Bureau of Land Mgmt.*, No. CV 16-21-GF-BMM, 2018 WL 1475470, at *16 (D. Mont. Mar. 26, 2018) (holding that agency violated NEPA by estimating emissions solely on the basis of methane GWP of 25).

IV. Other Air Pollution

In addition to emission of nearly four million tons per year of greenhouse gases, the Commonwealth LNG project will emit major volumes of criteria and hazardous air pollutants. The DEIS estimates the following operational emissions:

| Operational Emissions (tons per year) | | | | | | | |
|---------------------------------------|-----------------|-------|------------------|-------------------|-----|------------------|-----|
| NOx | SO ₂ | CO | PM ₁₀ | PM _{2.5} | VOC | CO _{2e} | HAP |
| 655 | 67 | 1,514 | 239 | 238 | 163 | 3,728,015 | 109 |

DEIS at 4-201.

The terminal’s emissions will occur approximately two miles southwest of the town center of Cameron, Louisiana, which has a population of 6,973. DEIS at 4-157. Communities surrounding Cameron are already disproportionately exposed to significant air and water pollution from nearby facilities.

In discussing the amount and impact of air pollution, the DEIS appears to rely on analysis conducted to support Commonwealth’s proposed Part 70 Air Operating Permit and Prevention of Significant Deterioration (PSD) Permit. DEIS at 4-182.³⁷ As Sierra Club has explained in

(D.C. Cir. 2015) (IPCC’s “peer-reviewed assessments synthesized thousands of individual studies on various aspects of greenhouse gases and climate change and drew ‘overarching conclusions’ about the state of the science in this field.”).

³⁷ See also Accession 20210817-5051, Commonwealth_LNG_Modeling_Report-2021-08-12.pdf. “To minimize duplicate efforts” FERC encourages applicants to “file a copy of analyses

comments submitted in those dockets, Commonwealth's analysis therein is flawed.³⁸ In summary:

- The proposed emission limits are unenforceable, and project emissions will therefore likely exceed the amounts predicted in these materials and the DEIS.³⁹
- The proposed permit fails to include monitoring sufficient to ensure compliance with the Clean Air Act.⁴⁰
- Because the modeling relies on these underestimates of emissions, the modeling fails to show that actual emissions will not cause or contribute to a violation of the NAAQS⁴¹
- The Best Available Control Technology Analysis is flawed, establishes limits for multiple pollutants that are deficient, and fails to consider alternative BACT designs.⁴²

We incorporate herein the comments explaining these issues in greater detail. Because the DEIS rests on these flawed prior analyses, the DEIS fails to support its conclusion that “[t]he dispersion modeling analyses, and additional impact analyses performed demonstrated compliance with all ambient air quality standards applicable to Commonwealth LNG. The analyses showed that operation of the facility would not cause or make a significant contribution to any violation of either the NAAQS or the existing PSD increments.” DEIS at 4-207.

performed under the PSD Permitting Program.” FERC, *Guidance Manual for Environmental Report Preparation*, at 4-121 n. 36.

³⁸ Sierra Club Comments and Exhibits re: Commonwealth LNG LLC — Amended Comments of Sierra Club on Proposed Part 70 Air Operating Permit, Prevention of Significant Deterioration (PSD) Permit and the Associated Environmental Assessment (EAS); AI Number 221642, Permit Numbers 0560-00997-V0 and PSD-LA-841, and Activity Numbers PER20210001 and PER20210002 (Apr. 12, 2022) (“Sierra Club PSD Comments”), attached.

³⁹ *Id.* at 31.

⁴⁰ *Id.* at 32-33.

⁴¹ *Id.* at 22-25.

⁴² *Id.* at 25-31.

V. Wetlands

A. The DEIS Fails to Take a Hard Look at Wetland and Chenier Impacts

The DEIS estimates that construction of the terminal and pipeline will impact 139.5 acres of wetlands, with 89.9 acres of permanent impacts.⁴³ The DEIS fails to take a hard look at the consequences of these impacts.

Perhaps most importantly, the DEIS fails to adequately consider the cumulative impact of wetland loss in Louisiana. Wetlands are integral to Louisiana in way unlike any other state: Louisiana has 40 percent of the country's wetlands, and wetlands account for 11 percent of the state's landmass.⁴⁴ But Louisiana is losing wetlands at an exceptional rate: over 90 percent of the coastal marsh loss in the continental United States occurs in Louisiana,⁴⁵ and at the current rate of loss, Louisiana's wetlands would entirely disappear in approximately 200 years.⁴⁶ The DEIS concludes that impacts to wetlands here can be mitigated to insignificance, but this claim has been made for many other projects as well, and wetland loss persists nonetheless. Nor does the DEIS adequately address the fact that as more wetlands are lost, the state, local communities, and the environment become less and less able to tolerate further losses, relying on a diminishing acreage of wetlands to, for example, protect against storm surges,⁴⁷ or provide habitat.⁴⁸

⁴³ DEIS at 4-78 to -79.

⁴⁴ Blake Donewar, *Saving Louisiana's Wetlands: Solving the Longstanding Environmental Crisis Through Contractual Liability*, Loyola Law Review (May 20, 2020), <http://www.loyno-lawreview.com/2020/05/20/savinglouisianas-wetlands-solving-the-longstanding-environmental-crisis-through-contractual-liability/>.

⁴⁵ *Louisiana's disappearing WETLANDS*, Southeastern Louisiana University, <https://www2.southeastern.edu/orgs/oilspill/wetlands.html#:~:text=While%20Louisiana%20has%2040%25%20of,the%20turn%20of%20the%20century.>

⁴⁶ Blake Donewar, *Saving Louisiana's Wetlands: Solving the Longstanding Environmental Crisis Through Contractual Liability*, Loyola Law Review (May 20, 2020), <http://www.loyno-lawreview.com/2020/05/20/savinglouisianas-wetlands-solving-the-longstanding-environmental-crisis-through-contractual-liability/>.

⁴⁷ *Louisiana Coastal Wetland Functions and Values*, <https://lacoast.gov/reports/rtc/1997/4.htm>.

⁴⁸ *Louisiana Coastal Wetland Functions and Values*, <https://lacoast.gov/reports/rtc/1997/4.htm>.

analysis is to inform that very review: the entire premise of NEPA is that proposed, non-final actions will be presented to the public for comment. The DEIS offers no justification for failing to present Commonwealth's proposal regarding the amount, type, and location of wetland mitigation bank credits. And again, FERC cannot punt this issue to the Corps. The Corps' decision it itself a major federal action subject to NEPA, and FERC has a statutory obligation to act as lead agency for the NEPA process and to inform the Corp's decisionmaking. 15 USC § 717n.

It is particularly important to present the proposed mitigation plan to the public in a draft NEPA document because the current plan appears to be a complete departure from Commonwealth's initial proposal. The Corps' May 11, 2020 notice states the applicant proposes that its mitigation will be based on the beneficial use of dredged material (BUDM) and "therefore a supplemental compensatory mitigation plan has not been proposed."⁷³ The notice refers to a BUDM plan, which was not made available with the notice, and the notice does not mention wetlands banking. The DEIS does not mention this prior proposal to use BUDM instead of "purchase of wetlands mitigation bank credits."⁷⁴ While a change in plan is not itself a problem, this change accentuates the problems arising from the DEIS's failure to provide actual specifics about the proposed mitigation: while the public should not be required to look elsewhere to find this information, here, such investigation turns up another plan entirely, which the applicant and agencies appear to have silently discarded.

VI. Environmental Justice

NEPA requires an environmental impact assessment to examine all potential impacts of a project, including "ecological . . . aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative."⁷⁵ Agencies must consider the environmental justice

⁷³ Commonwealth Army Corps Public Notice.

⁷⁴ DEIS at 4-81.

⁷⁵ 40 C.F.R. § 1508.8.

impacts of their actions on low-income, minority communities in accordance with Executive Order 12898.⁷⁶

Recently, FERC published its draft updated Certificate Policy Statement.⁷⁷ With the new policy statement, FERC explained that “[t]he Commission’s public interest responsibility demands that we seriously evaluate [environmental justice] considerations” and that FERC’s obligation to consider impacts to environmental justice communities extends to both Section 3 and Section 7 approvals.⁷⁸

The Council on Environmental Quality (CEQ) has also issued guidance on incorporating environmental justice (EJ) considerations in the NEPA process.⁷⁹ The guidance reads in part:

In preparing an EIS or an EA, agencies must consider both impacts on the natural or physical environment and related social, cultural, and economic impacts. Environmental justice concerns may arise from impacts on the natural and physical environment, such as human health or ecological impacts on minority populations, low-income populations, and Indian tribes, or from related social or economic impacts.⁸⁰

Cameron Parish and neighboring communities are already overburdened with industry and polluting facilities and are at the forefront of climate change impacts, which would be exacerbated by the Project. Communities within Cameron Parish are inundated with quickly rising seas. Toxic pollution from industrial facilities disproportionately impact low-income neighborhoods and communities of color along the Gulf Coast. In particular, Cameron Parish and the neighboring Calcasieu Parish have at least three existing or under construction LNG

⁷⁶ *Coliseum Square, Inc. v. Jackson*, 465 F.3d 215, 232 (5th Cir. 2006).

⁷⁷ *Certification of New Interstate Natural Gas Facilities*, 178 FERC ¶ 61,107 (2022) (Updated Policy Statement) (In February, the Commission issued an update to its 1999 Certificate Policy Statement, though is now soliciting further comments.)

⁷⁸ *Id.* at ¶¶ 86, 86 n. 204.

⁷⁹ Council on Envtl. Quality, *Environmental Justice: Guidance Under the National Environmental Policy Act* (1997), available at: https://www.epa.gov/sites/default/files/2015-02/documents/ej_guidance_nepa_ceq1297.pdf (hereinafter “CEQ EJ Guidance”).

⁸⁰ *Id.* at 8.

terminals, three approved but not yet constructed LNG terminals, and an additional two proposed LNG terminals.

A. The Commonwealth LNG Project Will Have Adverse Impacts on Low-Income and Minority Communities

FERC uses the 50 percent and the meaningfully greater analysis methods to identify minority populations as recommended by the *CEQ Environmental Justice Guidance and Promising Practices*. DEIS at 4-170. Using this methodology, minority populations are defined in this EIS where either: (a) the aggregate minority population of the block groups in the affected area exceeds 50 percent; or (b) the aggregate minority population in the block group affected is 10 percent higher than the aggregate minority population percentage in the parish. *Id.* The guidance also directs low-income populations to be identified based on the annual statistical poverty thresholds from the U.S. Census Bureau. *Id.* Using *Promising Practices'* low-income threshold criteria method, low-income populations are identified as census block groups where the percent low-income population in the identified block group is equal to or greater than that of the parish. *Id.*

A majority of the population within the geographic scope for environmental justice surrounding the project is living in environmental justice communities. DEIS at 5-379. While the Commonwealth Project will not be located within an environmental justice block group, eight of the surrounding 11 block groups within 23 miles of the LNG Terminal, one-mile of the Park and Ride locations, and crossed by the Pipeline segments have been identified as environmental justice census blocks. DEIS at 4-171. Five of the block groups are identified as environmental justice populations based on poverty levels, one due to a meaningfully greater minority population, and two have both high poverty and minority populations. *Id.* Additionally, one of the census block groups within 1-mile of the Park and Ride locations was identified as an environmental justice community based on poverty levels. *Id.*

For this project, a disproportionately high and adverse effect on an environmental justice community means the adverse effect is predominately borne by such population. *Id.* The DEIS identified that there would be Project-related impacts on wetlands, surface water, visual resources, tourism, socioeconomics, traffic, noise, and air quality that may adversely affect the identified environmental justice communities. *Id.* The DEIS concludes that, aside from

significant impacts associated with visual resources, “the impacts experienced by these environmental justice communities in the project area would not be predominately borne by the environmental justice community. Therefore, impacts would not be disproportionately high and adverse as the project would not be located in an environmental justice community and the closest residents are not located in an environmental justice community.” DEIS at 4-182 to -183. Environmental justice concerns cannot be ignored “simply on the basis that those groups will experience conditions no worse than the surrounding county—particularly when the surrounding county presents many of the same concerns that underlie the CEQ’s and EPA’s environmental justice guidance.”⁸¹

B. The DEIS Fails to Consider Whether Unique Factors Within Impacted Environmental Justice Communities Will Result in Disproportionate Impacts from the Project

The DEIS fails to consider that environmental justice populations may be more susceptible to environmental degradation than other populations. As EPA has explained in its guidance on evaluating environmental justice impacts in NEPA review:

Focusing the analysis [on the relevant environmental justice context] may show that potential impacts, which are not significant in the NEPA context, are particularly disproportionate or particularly severe on minority and/or low-income communities. As mentioned previously, disproportionately high and adverse effects should trigger the serious consideration of alternatives and mitigation actions in coordination with extensive community outreach efforts.⁸²

Thus, the direct, indirect, and cumulative effects of a project may have a disproportionately severe or adverse impact on an environmental justice community even if an

⁸¹ *Rio Grande LNG, LLC and Rio Bravo Pipeline*, 169 FERC ¶ 61,131 (Nov. 22, 2019)(Glick, Comm’r, dissenting at P9).

⁸² EPA, *Final Guidance for Incorporating Environmental Justice Concerns in EPA’s NEPA Compliance Analyses* § 3.2.2. (Apr. 1998), available at: https://www.epa.gov/sites/default/files/2015-02/documents/ej_guidance_nepa_epa0498.pdf (hereinafter “EPA EJ Guidance”).

EIS determines that the general impacts are not significant. Moreover, as discussed throughout this submission, FERC failed to evaluate the full severity of many of the Project's impacts.

One instance of such a failing is the assessment of air quality impacts on environmental justice communities. The DEIS simply concludes that because air pollutants will be minimized or within the NAAQS, their impacts will be minor. The DEIS conducts no further analysis as to whether declining air quality from the Project's significant air emissions will have an adverse and disproportionate impact on EJ communities. By doing so, the DEIS fails to take a hard look at the impacts of declining air quality on EJ communities impacted by the Project, regardless of compliance with the NAAQS. FERC failed to analyze three factors that could result in disproportionate impacts on EJ communities from exposure to increased air emission levels: (1) levels of existing asthma or respiratory disease by income, (2) age disparities, and (3) lack of access to health care.

FERC's conclusion is based on the erroneous premise that air pollution is of no concern so long as there is not a National Ambient Air Quality Standards (NAAQS) violation. FERC must recognize that air pollution that does not exceed the individual NAAQS can cause harmful health impacts. Particulate matter, nitrogen-dioxide, and ozone are recognized as pollutants for which no threshold of exposure fully protects human health. *Am. Trucking Ass'n, Inc. v. EPA*, 283 F.3d 355, 359-360 (D.C. Cir. 2002); EPA, NAAQS for Nitrogen Dioxide, 75 Fed. Reg. 6,474, 6500 (Feb. 9, 2010). For example, although the current NAAQS for ozone is 70 parts per billion, EPA has recognized that ozone levels of 65, or even 60 parts per billion adversely impact short- and long-term respiratory mortality, and significantly impact morbidity. EPA, Regulatory Impact Analysis of the Proposed Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone, at 5-78 (2014).⁸³ Even if FERC is able to demonstrate that the individual and cumulative impact of air pollution are not likely to exceed the NAAQS, this does not demonstrate that the cumulative effect of air pollution impacts on human health will be insignificant.

In particular, FERC failed to consider environmental justice communities' susceptibility to air pollution even at levels below the NAAQS. Agencies should conclude that proposed

⁸³ Available at <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100L0HZ.txt>.

actions will not have disproportionate or adverse impacts on environmental justice communities “solely because the potential impacts of the proposed action or alternative on the general population would be less than significant (as defined by NEPA).”⁸⁴ Thus, a finding that project impacts would be insignificant in general does not mean that those effects will not disproportionately impact EJ communities, or that such disproportionate impacts are not cause for concern.⁸⁵ For example, environmental justice communities may be exposed to multiple pollutants, in a situation wherein no individual pollutant exceeds some threshold of significance, but where the cumulative effect of exposure to multiple pollutants causes concerning health impacts.⁸⁶ This risk of multiple exposure may not be captured by the NAAQS. EPA sets the NAAQS in a context of assessing “acceptable” risks, not eliminating all risk. *Murray Energy Corp. v. EPA*, 936 F.3d 597, 609 (D.C. Cir. 2019). However, risks tolerated by EPA when setting one-size-fits-all nationwide regulations may be amplified in the context of EJ communities. See e.g., *Friends of Buckingham v. State Air Pollution Control Bd.*, 947 F.3d 68, 86, 92 (4th Cir. 2020) (finding the Board’s state law EJ analysis incomplete when it failed to consider “the potential degree of injury to the local population independent of NAAQS”).

VII. Species

A. The DEIS Fails to Adequately Assess Impacts on Endangered and Threatened Species

A review of the DEIS and materials provided by the Applicant reveals that the analysis contains insufficient information to fully determine the extent of adverse effects on listed species, or to determine whether proposed mitigation measures are sufficient to eliminate, avoid, or minimize adverse effects on those species.

⁸⁴ EPA, *Promising Practices for EJ Methodologies in NEPA Reviews: Report of the Federal Interagency Working Group on Environmental Justice & NEPA Committee* (2016) (“EJ-IWG Guidance”) at 39.

⁸⁵ EPA EJ Guidance, at § 3.2.2.

⁸⁶ CEQ EJ Guidance, at 9 (“Agencies should consider … multiple or cumulative exposures to human health or environmental hazards in the affected population”).

Response to Environmental Information Request
Dated June 9, 2022

Submitted to FERC on June 24, 2022

Alternatives

7. Provide a response to the questions posed by the Sierra Club et al. in comments filed on May 23, 2022 (accession number 20220523-5173) revisiting the possibility that Commonwealth could use a different and/or more efficient liquefaction process (for instance, APCI C3MR), which would result in Commonwealth needing to construct fewer liquefaction trains and thereby reduce the Project's footprint and operating emissions, and whether emissions could be reduced by replacing some or all Commonwealth's proposed simple cycle gas combustion turbines with combined cycle units or otherwise implementing additional waste heat recovery.

Response:

As stated in Commonwealth's response to Resource Report 10, Question 14, of the Environmental Information Request issued September 15, 2021 (Accession No. 20210930-5255), Commonwealth selected the Air Products SMR process because it has been proven to be an efficient process for mid-scale LNG facilities. At Commonwealth's 1.4 million (metric) tonnes per annum (MTPA) train capacity, the SMR process has similar, but slightly lower efficiency as the C3MR or DMR processes but with fewer pieces of equipment and a substantially reduced footprint. The C3MR and DMR processes are most often used in much larger LNG trains, typically over 4-5.5 MTPA each. For comparison, Commonwealth's six liquefaction trains have a combined footprint of approximately 20 acres within the overall LNG Facility. At another LNG facility in the same area, a single 5-MTPA train occupies approximately 20 acres, and two such trains, as would be needed to match Commonwealth's capacity, would occupy approximately 40 acres, requiring an expansion of the overall LNG Facility footprint.

Within a liquefaction technology, the process efficiency is affected by the efficiency performance of the combustion turbine that drives the refrigeration compressor. Commonwealth has designed the facility to optimize the amount of time that the machine can operate at peak efficiency. If a more efficient process is employed for the same available power, the emissions would remain the same, but the volume of LNG produced would increase. Emissions would not be reduced.

The use of a combined cycle power plant was also evaluated. A 500 MW power plant would be required to drive the refrigeration compressors using electric motors, and to also provide the 120 MW auxiliary load needed for the balance of the plant.

Such a power plant would require an additional 100 acres, thus essentially doubling the current overall footprint and environmental impact. Upon further analysis, the conclusion was reached that converting natural gas to electricity, then back to mechanical power, with variable frequency drive (VFD) electrical motors, is not the most efficient solution. The losses associated with the high voltage gear and the VFDs eliminate any benefit such solution may have in comparison with gas turbine direct mechanical drive of the refrigeration compressors and recovery of the gas turbines waste heat.

Commonwealth LNG Project
FERC Docket No. CP19-502-000

Response to Environmental Information Request
Dated June 9, 2022

Submitted to FERC on June 24, 2022

Alternatives

8. Provide a response to public comments received on May 19, 2022 (accession number 20220519-5027) comments regarding:
 - a. the feasibility of the flare structure, piping, and pipe rack to withstand not only design storm surge loads, but the impacts from heavy debris carried by the storm surge; and
 - b. the feasibility of extending the storm surge wall to encompass the elevated flare stacks.

Response:

Commonwealth's flare stacks and associated pipeline and pipe racks will be designed to withstand storm surge and associated storm loads, in accordance with regulatory requirements and industry standards. Speculation regarding the potential for a low-probability event, such as the impact of a fishing vessel, is beyond regulatory requirements and has not been specifically modeled. Commonwealth's Hazard Identification (HAZID) report has been provided as Appendix 13.G.1 to Resource Report 13 (Accession No. 20190820-5125).

Response prepared by:

Name: Jon Allcock

Affiliation: Commonwealth LNG

Phone: (346) 352-4440

Response to Environmental Information Request
Dated June 9, 2022

Submitted to FERC on June 24, 2022

Alternatives

9. Provide additional information regarding the questions posed by the Sierra Club et al. in comments filed on May 23, 2022 related to Commonwealth's application amendment to increase the storage capacity of the proposed LNG storage tanks.

Specifically,

- a. how often the closures of the Calcasieu Ship Channel due to high winds/rough seas, fog, and freezing weather might require a shutdown of the Commonwealth facility if the Commonwealth terminal had an LNG storage capacity of 240,000 cubic meters versus 300,000 cubic meters;
- b. quantify the impacts of shutting down and restarting the Commonwealth terminal, including the amount operating emissions would increase (in tons per year) as a result of the shut down and restart process; and
- c. why reducing the number of LNG storage tanks at the Commonwealth terminal from six to five would not reduce the size of the terminal footprint.

Response:

The design of the Commonwealth LNG facility has been optimized to make the most efficient use of land for any U.S. LNG facility, occupying approximately 14 acres per million tonnes of LNG produced annually (Accession No. 20210930-5255). Although reductions in size by elimination of equipment are theoretically possible, such reductions detrimentally affect the Project's operational flexibility.

Commonwealth has based its ratio of LNG storage capacity versus liquefaction and export capacity on typical industry practice. The operational buffer provided by the LNG storage capacity of the sixth tank equates to approximately one day of operation, which is also aligned with industry best practices.

The frequency of extreme weather events, such as high winds, rough seas, heavy fog, and freezing weather during the operational lifespan of the Project is speculative and cannot be predicted or planned for with any reasonable degree of certainty, as would be the circumstances of the shutdowns and restarts required by each unique event should they occur.

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Response to Environmental Information Request
Dated June 9, 2022

Submitted to FERC on June 24, 2022

Water Resources

11. In Commonwealth's filing from May 23, 2022, it notes a new bridge would be constructed to allow access from Highway 27/82 to the temporary access road Commonwealth has proposed as part of construction of the pipeline; however, Commonwealth states there would be no additional waterbody impacts than those initially described by Commonwealth. Explain how Commonwealth would conduct any needed in-water work in removing the damaged material of the old bridge and installing a new bridge with no potential waterbody impacts.

Response:

As shown in Table 2.2-1 of Resource Report 2 (Accession No. 20190820-5125), Waterbody C02 will be crossed by a Temporary Access Road. The impact of the 25-foot-wide access road over this 65-foot-wide waterbody was estimated at 1,625 feet (i.e., <0.1 acre). The current/existing waterbody crossing includes four main timber girders, nominally 2 feet wide by 1 foot high by 30 feet long, with a 6-foot center-to-center spacing. These girders are placed onto a gravel foundation. The partial/remnant crossing deck on these timbers is nominally 15 feet long by 8 feet wide. The deck and girder timbers will be removed from the canal using equipment located on the approach road from Highway 27/82. A land-based excavator will be used to skid the timbers onto the approach road, from where they will be transported to a disposal site. The new canal bridging will be placed in accordance with the permit requirements of both the Cameron Parish Gravity Drainage District 7 and the Louisiana Department of Transportation and Development (LDOTD). Both these authorities have been contacted with regards to this issue (Appendix C). Flow in the drainage ditch will be maintained by a series of either four 48-inch or three 52-inch pipe culverts, overlain with gravel to form the wearing surface. A land-based excavator will be used to remove in-canal material to the correct elevation, as needed. The pipe culverts will be placed sequentially from the south side of the canal, with each pipe culvert back-filled and overlaid with a gravel wearing surface. Details will be confirmed with Cameron Parish Gravity Drainage District 7 and the LDOTD. The proposed workspace will be no more than 25 feet wide (i.e., within the originally proposed width of the temporary access road). There will be no change to the impact acreage.

Response prepared by:

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**Office of
Energy
Projects**

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FERC/FEIS-0316

FINAL ENVIRONMENTAL IMPACT STATEMENT for the COMMONWEALTH LNG PROJECT

Volume I

Commonwealth LNG, LLC

Docket Nos. CP19-502-000
CP19-502-001

Federal Energy Regulatory Commission
Office of Energy Projects
Washington, DC 20426

Cooperating Agencies:



U.S. Army
Corps of Engineers



U.S. Coast Guard



U.S. Department
of Energy



U.S. Department
of Transportation



U.S. Environmental
Protection Agency



U.S. Fish and
Wildlife Service



National Oceanic
Atmospheric Administration -
National Marine Fisheries Service

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:

OEP/DG2E/Gas Branch 1
Commonwealth LNG, LLC
Commonwealth LNG Project
Docket Nos. CP19-502-000,
CP19-502-001

TO THE INTERESTED PARTY:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared a final environmental impact statement (EIS) for the Commonwealth LNG Project, proposed by Commonwealth LNG, LLC (Commonwealth) in the above-referenced docket. Commonwealth requests authorization to site, construct, and operate a natural gas liquefaction and export terminal and an integrated Natural Gas Act Section 3 natural gas pipeline, in Cameron Parish, Louisiana.

The final EIS assesses the potential environmental effects of the construction and operation of the Commonwealth LNG Project in accordance with the requirements of the National Environmental Policy Act (NEPA). FERC staff concludes that approval of the proposed project, with the mitigation measures recommended in the EIS, would result in some adverse environmental impacts. Most of these impacts on the environment would be reduced to less than significant levels; however, FERC staff conclude there would be significant impacts on visual resources and impacts on environmental justice communities would be disproportionately high and adverse. Regarding climate change impacts, this EIS is not characterizing the proposed project's greenhouse gas emissions as significant or insignificant because the Commission is conducting a generic proceeding to determine whether and how the Commission will conduct significance determinations going forward.¹

The U.S. Army Corps of Engineers, U.S. Coast Guard, U.S. Department of Energy, U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and National Oceanic and Atmospheric Administration's National Marine Fisheries

1 Consideration of Greenhouse Gas Emissions in Natural Gas Infrastructure Project Reviews, 178 FERC ¶ 61,108 (2022); 178 FERC ¶ 61,197 (2022).

Service participated as cooperating agencies in the preparation of the final EIS. Cooperating agencies have jurisdiction by law or special expertise with respect to resources potentially affected by the proposal and participate in the NEPA analysis. Although the cooperating agencies provided input to the conclusions and recommendations presented in the final EIS, the agencies will present their own conclusions and recommendations in their respective Records of Decision for the project.

The final EIS addresses the potential environmental effects of the construction and operation of the following project facilities:

- six liquefaction trains;
- six gas pre-treatment trains;
- two flare systems (containing a total of four flares);
- six liquefied natural gas (LNG) storage tanks;
- one marine facility consisting of an LNG carrier berth and barge dock;
- utilities (e.g., electricity generation, water, plant air, nitrogen, hot oil system);
- operation and safety systems (e.g., access and haul roads, storm protection structures, stormwater drainage systems, spill containment system, fire suppression facilities, facility lighting and security, emergency shutdown systems);
- appurtenant facilities (e.g., administrative facilities, maintenance and warehouse buildings, marine facility operator buildings, equipment enclosures and electrical rooms);
- 3.0 miles of 42-inch-diameter pipeline;
- two interconnection facilities with existing pipelines; and
- one metering station.

The Commission mailed a copy of the *Notice of Availability* to federal, state, and local government representatives and agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners and other interested individuals and groups; and newspapers and libraries in the project area. The final EIS is only available in electronic format. It may be viewed and downloaded from the FERC's website (www.ferc.gov), on the natural gas environmental documents page (<https://www.ferc.gov/industries-data/natural-gas/environment/environmental-documents>). In addition, the final EIS may be accessed by using the eLibrary link on the FERC's website. Click on the eLibrary link (<https://elibrary.ferc.gov/eLibrary/search>) select "General Search" and enter the docket number in the "Docket Number" field (i.e. CP19-502). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at FercOnlineSupport@ferc.gov or toll free at (866) 208-3676, or for TTY, contact (202) 502-8659.

The final EIS is not a decision document. It presents Commission staff's independent analysis of the environmental issues for the Commission to consider when addressing the merits of all issues in this proceeding.

Additional information about the project is available from the Commission's Office of External Affairs, at **(866) 208-FERC**, or on the FERC website (www.ferc.gov) using the [eLibrary](#) link. The eLibrary link also provides access to the texts of all formal documents issued by the Commission, such as orders, notices, and rulemakings.

In addition, the Commission offers a free service called eSubscription that allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. Go to <https://www.ferc.gov/ferc-online/overview> to register for eSubscription.

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TECHNICAL ACRONYMS AND ABBREVIATIONS

| | |
|-------------------------|--|
| ACHE | air cooled heat exchanger |
| ACI | American Concrete Institute |
| ACS | American Community Survey |
| AEGL | Acute Exposure Guideline Level |
| AERMOD | American Meteorological Society/EPA Regulatory Model |
| AIChE | American Institute of Chemical Engineers |
| ALPEMA | Aluminum Plate-Fin Heat Exchanger Manufacturer's Association |
| ANSI | American National Standards Institute |
| AQCRs | Air Quality Control Regions |
| ASME | American Society of Mechanical Engineers |
| ASTM | American Society for Testing and Materials |
| ATWS | additional temporary workspace |
| BA | Biological Assessment |
| Bcf/d | billion cubic feet per day |
| BGEPA | Bald and Golden Eagle Protection Act |
| BLEVE | boiling liquid expanding vapor explosion |
| BMP | best management practice |
| BO | Biological Opinion |
| BOG | boil-off gas |
| BPVC | Boiler and Pressure Vessel Code |
| Bridgeline | EnLink Bridgeline Holdings |
| Btu/ft ² -hr | British thermal units per square foot per hour |
| BUDM | beneficial use of dredged materials |
| CAA | Clean Air Act |
| CCS | carbon capture and sequestration |
| CCPS | Center for Chemical Process Safety |
| CEQ | Council on Environmental Quality |
| CFR | Code of Federal Regulations |
| CH ₄ | methane |
| Cl- | chloride ion |
| CO | carbon monoxide |
| CO ₂ | carbon dioxide |
| CO _{2e} | carbon dioxide equivalent |
| COE | United States Army Corps of Engineers |
| Commonwealth | Commonwealth LNG, LLC |
| COTP | Captain of the Port |
| CPRA | Louisiana Coastal Protection Restoration Authority |

| | |
|--------|--|
| CPT | cone penetration test |
| cSEL | cumulative sound exposure level |
| CWA | Clean Water Act |
| CZMA | Coastal Zone Management Act |
| CZMP | Coastal Zone Management Program |
| dB | decibel |
| dBA | A-weighted decibel |
| DCS | distributed control system |
| DOD | Department of Defense |
| DOE | United States Department of Energy |
| DOT | United States Department of Transportation |
| DMMP | Dredged Material Management Plan |
| dBpeak | peak sound pressure level |
| EEM | estuarine emergent wetland |
| EFH | essential fish habitat |
| EFO | estuarine forested wetland |
| EI | Environmental Inspector |
| EIS | Environmental Impact Statement |
| EPA | Environmental Protection Agency |
| EPAct | Energy Policy Act |
| EO | Executive Order |
| ERP | Emergency Response Plan |
| ERPG | Emergency Response Planning Guidelines |
| ESA | Endangered Species Act |
| ESD | emergency shutdown |
| ESS | estuarine scrub-shrub wetland |
| FEED | front-end-engineering-design |
| FERC | Federal Energy Regulatory Commission |
| FHWA | Federal Highway Administration |
| FMP | Fisheries Management Plan |
| FRA | Federal Rail Administration |
| FSA | Facility Security Assessment |
| FSP | Facility Security Plan |
| FTA | Free Trade Agreement |
| FWS | Fish and Wildlife Service |
| GHG | greenhouse gases |
| GMFMC | Gulf of Mexico Fishery Management Council |
| GT | gas turbine |

| | |
|---------------------|--|
| GWP | Global Warming Potential |
| H ₂ S | hydrogen sulfide |
| HAP | hazardous air pollutants |
| HAZID | hazard identification |
| HAZOP | Hazard and Operability Review |
| HDD | horizontal directional drill |
| HEI | Heat Exchanger Institute |
| HIPPS | high integrity pressure protection system |
| HMB | heat and material balances |
| HUC | hydrological unit code |
| IBA | Important Bird Area |
| IBC | International Building Code |
| IHA | Incidental Harassment Authorization |
| IMO | International Marine Organization |
| ISO | International Organization for Standardization |
| ITS | Incidental Take Statement |
| IWG | Interagency Working Group |
| JPA | Joint Permit Application |
| kW/m ² | kilowatts per square meter |
| Kinetica | LP Kinetica Partners, LLC |
| KMLP | Kinder Morgan Louisiana Pipeline |
| L _{dn} | day-night sound level |
| L _{eq} | total noise impacts |
| L _{eq(24)} | 24-hour equivalent sound level |
| L _{max} | maximum noise impacts |
| LAC | Louisiana Administrative Code |
| LDEQ | Louisiana Department of Environmental Quality |
| LDNR | Louisiana Department of Natural Resources |
| LDWF | Louisiana Department of Wildlife and Fisheries |
| LFL | lower flammable limit |
| LNG | liquefied natural gas |
| LOD | Letter of Determination |
| LOR | Letter of Recommendation |
| LPDES | Louisiana Pollutant Discharge Elimination System |
| LPG | liquefied petroleum gas |
| m ³ | cubic meters |
| MAOP | maximum allowable operating pressure |
| MBTA | Migratory Bird Treaty Act |

| | |
|------------------|--|
| MCC | motor control center |
| MERPS | modeled emission rates for precursors |
| MEOW | maximum envelope of water |
| Mg/L | milligrams per liter |
| MLs | monitoring locations |
| MMBtu/hr | million British thermal units per hour |
| MMPA | Marine Mammal Protection Act |
| MOU | memorandum of understanding |
| MP | milepost |
| mph | miles per hour |
| MSA | Magnuson-Stevens Fishery Conservation and Management Act of 1976 |
| MTPA | million metric tonnes per annum |
| MTSA | Maritime Transportation Security Act |
| MW | megawatt |
| N ₂ O | nitrous oxide |
| NAAQS | National Ambient Air Quality Standards |
| NAVD | North America Vertical Datum of 1988 |
| NBSIR | National Bureau of Standards Information Report |
| NEHRP | National Earthquake Hazards Reduction Program |
| NEPA | National Environmental Policy |
| NESHAP | National Emission Standards for Hazardous Air Pollutants |
| NFPA | National Fire Protection Association |
| NGA | Natural Gas Act |
| NGO | non-governmental organization |
| NHD | National Hydrographic Dataset |
| NHPA | National Historic Preservation Act |
| NHTSA | National Highway Traffic Safety Administration |
| NM | nautical miles |
| NMFS | National Marine Fisheries Service |
| NOAA | National Oceanic and Atmospheric Administration |
| NOI | Notice of Intent |
| NO ₂ | nitrogen dioxide |
| NO _x | nitrogen oxides |
| NPDES | National Pollutant Discharge Elimination System |
| NRCS | Natural Resources Conservation Service |
| NRHP | National Register of Historic Places |
| NSA | noise sensitive areas |
| NSPS | New Source Performance Standards |

| | |
|-------------------|--|
| NVIC | Coast Guard's Navigation and Vessel Inspection Circulars |
| NWR | National Wildlife Refuge |
| O ₃ | ozone |
| OBE | operating basis earthquake |
| OCM | Louisiana Department of Natural Resources Office of Coastal Management |
| P&IDs | piping and instrumentation drawings |
| Pb | lead |
| PFD | process flow diagram |
| PHMSA | Pipeline and Hazardous Materials Safety Administration |
| PIPA | Pipelines and Informed Planning Alliance |
| Plan | FERC's Upland Erosion Control, Revegetation, and Maintenance Plan |
| Procedures | FERC's Wetland and Waterbody Construction and Mitigation Procedures |
| PM | particulate matter |
| PM ₁₀ | PM less than 10 microns in diameter |
| PM _{2.5} | PM less than 2.5 microns in diameter |
| ppe | personal protective equipment |
| ppt | parts per thousand |
| PSD | Prevention of Significant Deterioration |
| psi | pound per square inch |
| PTE | potential to emit |
| PVBs | pressure vessel bursts |
| RHA | Rivers and Harbors Act |
| RICE | reciprocating internal combustion engines |
| RIE | remove instrument enclosure |
| RMP | Risk Management Plan |
| RPT | rapid phase transition |
| SER | Significant Emission Rate |
| SIL | Significant Impact Levels |
| SIP | State Implementation Plans |
| SIS | safety instrumented system |
| SLAMS | State and Local Air Monitoring Stations |
| SO ₂ | sulfur dioxide |
| SOLAS | International Convention for the Safety of Life at Sea |
| SOPEP | Shipboard Oil Pollution Emergency Plan |
| SPAR | Spill Prevention and Response Plan |
| SSE | safe shutdown earthquake |
| SWEL | stillwater flood elevation |

| | |
|----------|---|
| TEMA | Tubular Exchanger Manufacturers Association |
| Terminal | Commonwealth LNG Export Terminal |
| tpy | tons per year |
| TSS | total suspended solids |
| TWIC | Transportation Worker Identification Credential |
| UFL | upper flammable limit |
| UL | Underwriters Laboratories |
| USC | United States Code |
| USCG | United States Coast Guard |
| USGS | U.S. Geological Survey |
| VOC | volatile organic compounds |
| Vs | velocity |
| WSA | Waterway Suitability Assessment |

EXECUTIVE SUMMARY

INTRODUCTION

On August 20, 2019, Commonwealth LNG, LLC (Commonwealth) filed an application with the Federal Energy Regulatory Commission (Commission or FERC). Pursuant to Section 3(a) of the Natural Gas Act (NGA), Commonwealth requested authorization to site, construct, and operate a natural gas liquefaction and liquefied natural gas (LNG) export terminal, including an integrated NGA Section 3 natural gas pipeline, in Cameron Parish, Louisiana. The proposed project was designated as Docket No. CP19-502-000 by the Commission and is referred to as the “Commonwealth LNG Project” or “Project” in this Environmental Impact Statement (EIS).

This is not a decision document. The purpose of the EIS is to inform FERC decision-makers, the public, and the permitting agencies about the potential adverse and beneficial environmental impacts of the proposed Project and its alternatives and recommend mitigation measures that would reduce adverse impacts to the extent practicable. We² prepared this EIS to assess the environmental impacts associated with construction and operation of the Project as required under the National Environmental Policy Act (NEPA) of 1969, as amended. Our analysis is based on information provided by Commonwealth, and further developed from data requests, field investigations, scoping, literature research, and communications with federal, state, and local agencies, and individual members of the public.

FERC is the lead agency for the preparation of the EIS. The U.S. Army Corps of Engineers (COE), U.S. Coast Guard (USCG), U.S. Department of Energy (DOE), U.S. Department of Transportation (DOT), Pipeline and Hazardous Materials Safety Administration (PHMSA), U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (FWS), and National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) are participating in the NEPA review as cooperating agencies.³

Proposed Action

The Commonwealth LNG Project consists of two main components: 1) construction and operation of the LNG export terminal (Terminal), which includes six LNG plant facilities to liquefy natural gas,⁴ six tanks to store the LNG, an LNG carrier loading/berthing facility (marine facility), and other appurtenant facilities; and 2) construction and operation of 3.0 miles of 42-inch diameter pipeline (Pipeline) and one new meter station to deliver natural gas to the Terminal. The Project would produce 8.4 million metric tonnes per annum (MTPA) of LNG for export on an average of 156 LNG carriers per year.

Subject to the receipt of FERC authorization and all other applicable state and federal permits and approvals, Commonwealth anticipates beginning construction of the liquefaction facility in 2023 and beginning construction of the Pipeline in 2024. Commonwealth proposes to use modular techniques to construct the liquefaction plants and portions of the LNG storage tanks off-site in combination with traditional on-site construction practices for other Terminal and Pipeline components. Commonwealth

² “We,” “us,” and “our” refer to the environmental and engineering staff of the FERC’s Office of Energy Projects.

³ A cooperating agency is an agency that has jurisdiction over all or part of a project area and must make a decision on a project, and/or an agency that provides special expertise with regard to environmental or other resources.

⁴ A liquefaction plant (or train) is a facility that converts natural gas from its gaseous form (as it is transported in pipelines) into its liquefied form, known as LNG. In its liquefied form, natural gas occupies about 1/600th of the volume it does in its gaseous form, which makes it possible to transport large volumes of natural gas by LNG carriers.

asserts this approach would shorten the overall duration of on-site construction such that commercial operations could begin by the second quarter of 2026.

Public Involvement

On August 15, 2017, FERC accepted Commonwealth's request to begin pre-filing and Docket No. PF17-8-000 was established to place information related to the Project into the public record. The pre-filing review process provides opportunities for interested stakeholders to become involved early in project planning, facilitates interagency cooperation, and assists in the identification and resolution of issues prior to a formal application being filed with the FERC.

We have received comments from the public requesting public hearings regarding the Project during the pre-filing process. Commonwealth held an initial open house meeting on October 23, 2017, in Johnson Bayou, Louisiana, to introduce the Project to the local community. FERC staff participated in the meeting to describe the Commission's process and provide those attending with information on how to file comments with the Commission.

On February 22, 2018, FERC issued a *Notice of Intent to Prepare an Environmental Impact Statement for the Planned Commonwealth LNG Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Session* (NOI). The NOI was sent during the pre-filing process to about 300 interested parties, including property owners; elected officials; tribal governments; local, state, and federal regulatory agencies; libraries; local emergency responders; and local newspapers in the Project area. Publication of the NOI established a 30-day public scoping period.

We conducted a public scoping session to provide an opportunity for the public to learn more about the Project and provide oral and written comments on environmental issues to be addressed in the EIS. The scoping session was held in Johnson Bayou, Louisiana, on March 13, 2018. During the meeting, we received oral comments from one individual, which were transcribed by a court reporter, and written comments from other members of the public. Additional comments were submitted either by letter or electronically. All comments we received were posted to the Commission's public record through the FERC's online eLibrary system.

The pre-filing process ended on August 20, 2019, when Commonwealth filed its application with the FERC. On March 16, 2020, the Commission suspended the environmental review schedule for the Project pending adequate responses from Commonwealth to Commission staff data requests and an official interpretation from PHMSA pertaining to Commonwealth's proposed LNG storage tank design. On July 8, 2021, Commonwealth filed an amendment to its Natural Gas Act Section 3 Application to modify the proposed LNG storage tank designs and capacities so as not to require an interpretation from PHMSA. On July 13, 2021, the Commission issued an additional *Notice of Application for Amendment and Establishing Intervention Deadline*, which established a 21-day comment period for the submission of comments, concerns, and issues related to the environmental aspects of the proposed Project. On September 24, 2021, the Commission issued a *Notice of Intent to Prepare an Environmental Impact Statement, Request for Comments on Environmental Issues, and Revised Schedule for Environmental Review for the Project*. The notice established another 30-day scoping period.

During the scoping and comment periods, we received a total of 7 comments from two individuals that own land adjacent to the proposed Terminal site; 206 comments from individuals that do not own land adjacent to the proposed Project footprint; 11 comments from federal, state, and local agencies; 2 comments from Native American tribes; and 13 comments from companies and other non-governmental organizations (NGOs). The primary issues raised by the commenters related to potential Project impacts on water quality and wetlands, biological resources, recreational activities, local infrastructure, and air quality. We issued a *Notice of Availability of the Draft Environmental Impact Statement* on March 31, 2022. The draft EIS

was filed with the EPA and a formal notice of availability was issued in the Federal Register on April 6, 2022, which established a 45-day comment period on the draft EIS that ended on May 23, 2022. All substantive environmental issues identified through this public review process were addressed in the draft EIS.⁵

We held two virtual public comment sessions to solicit and receive comments on the draft EIS. The sessions were held on April 25, 2022 and April 26, 2022 and provided the public an opportunity to present oral comments to a court reporter on the analysis of environmental impacts described in the draft EIS. Ten individuals provided oral comments.⁶ We received written comments from 3 federal agencies, 1 state agency, 5 non-governmental organizations, and 15 individuals. We also received 1,792 copies of one form letter and 579 copies of a second form letter.

All comments received in response to the draft EIS are included in our comment responses in appendix M. Substantive environmental issues identified through this public review process are addressed in this EIS.⁷

ENVIRONMENTAL IMPACTS AND MITIGATION

We evaluated the potential impacts of construction and operation of the Project on geology; soils and sediments; water resources; wetlands; vegetation; wildlife and aquatic resources; threatened, endangered, and other special status species; land use, recreation, and visual resources; socioeconomics and environmental justice communities; cultural resources; air quality and noise; reliability and safety; and cumulative impacts, including climate change. In addition to the no-action alternative, we identified potential system, site, configuration, power source, and pipeline route alternatives. Where necessary, we recommend additional mitigation measures to minimize or avoid these impacts. Sections 5.1 and 5.2 of the EIS contain our conclusions and a compilation of our recommended mitigation measures, respectively.

Construction of the Terminal facilities would disturb 118.8 acres of land and 47.0 acres of open water. Of this total, 105.7 acres of land and 47.0 acres of open water would be impacted by operation and maintenance of the Terminal facilities. The remaining 13.1 acres of land would be temporarily affected during construction. Afterward, Commonwealth would restore this area to preconstruction conditions. An additional 274.2 acres would be leased by Commonwealth at the Terminal site but would not be affected by construction. Construction of the 3.0-mile-long Pipeline would disturb 48.4 acres of land, including temporary workspaces, one temporary access road, and aboveground facilities (one meter station and a pig launching facility⁸). Approximately 0.3 acre of land, associated with Pipeline's aboveground facilities, would be affected by operation of the Pipeline. Commonwealth would maintain a 3.5-foot-wide permanent

5 The transcripts of the public scoping session and all written comments are part of the FERC's public record for the Project and are available for viewing in eLibrary under docket number CP19-502-000.

6 The transcripts of the virtual public comment sessions are available for viewing in eLibrary under accession no. 20220826-4001.

7 The transcripts of the public scoping and draft EIS comment meetings and all written comments are part of the FERC's public record for the Project and are available for viewing in eLibrary under the pre-filing docket number (PF17-8-000) and the certificate proceeding docket numbers (CP19-502-000, CP19-502-001).

8 A "pig" is a device that travels within a pipeline and is used to clean and dry the pipeline and/or to inspect it for damage or corrosion.

right-of-way⁹ but would restore the entire right-of-way to its pre-construction state, which consists of herbaceous estuarine emergent wetland vegetation.

Based on our analysis, Project scoping, agency consultations, and public comments, the primary Project construction and operational impacts would be on geology, waterbodies and wetlands; vegetation; wildlife and aquatic resources; federally listed species; land use, recreation, and visual resources; socioeconomics; environmental justice, air quality and noise; reliability and safety; and cumulative impacts, including climate change.

Geology

The Project exists within a limited range of geologic conditions and resources. We conclude that construction and operation of the Project facilities in accordance with Commonwealth's proposed contingency measures related to mineral and paleontological resources, would not result in a significant impact on surface mines, mineral resources, or paleontological resources. Commonwealth would reduce the potential for impacts on the Project from natural hazards such as subsidence, coastal erosion, and flooding through its proposed engineering design.

Commonwealth proposes to use the horizontal directional drill (HDD) method to cross Highway 27/82, a 10-inch-diameter waterline, and two roadside ditches between and MPs 2.7 and 2.99. The total crossing length of the HDD would be approximately 1,940 feet. Commonwealth completed an analysis to assess the risk of hydrofracture releases and inadvertent returns of drilling fluid during the HDD process. Commonwealth's risk assessment indicates there is a "moderate" risk of an inadvertent release under Highway 27/82 and subsequent highway settlement on the order of one inch. For the remainder of the HDD alignment, including the roadside ditch waterbody adjacent to Highway 27/82, Commonwealth's assessment indicates the risk of an inadvertent release is "high" to "very high." Commonwealth would follow FERC's *Guidance for Horizontal Directional Drill Monitoring, Inadvertent Return Response, and Contingency Plans*. Commonwealth is consulting with the Louisiana Department of Transportation and Development to develop an alternative plan for crossing Highway 27/82 if, despite mitigation methods, an LDOTD inspector determines during construction that the amount of settlement beneath Highway 27/82 is unacceptable. To avoid environmental impacts in such a situation, we recommend in section 4.1.5.6 that Commonwealth complete an alternative plan for crossing Highway 27/82 that has been approved by the Louisiana Department of Transportation and Development and that Commonwealth should successfully complete the HDD or alternative plan for crossing Highway 27/82 prior to the start of construction of the remainder of the Pipeline right-of-way. With implementation of Commonwealth's mitigation methods and our recommendations, we conclude that Project impacts on geological resources would be adequately minimized and would not be significant.

Water Resources

The primary impacts on water resources from constructing the Terminal would include the filling of two unnamed waterbodies at the Terminal site and resuspension of sediments in the water column during construction and maintenance dredging of the marine facility. The filling of the waterbodies at the Terminal site would result in 2.8 acres of permanent impacts. Impacts on surface waters related to dredging would be temporary and would not substantially increase turbidity levels above general ambient conditions within the Calcasieu Ship Channel. Commonwealth evaluated the sediments to be dredged in accordance with the

⁹ Commonwealth states its permanent easement with the Pipeline right-of-way landowners would include the right to access the right-of-way for activities necessary to protect, inspect, maintain, operate, and repair the Pipeline in accordance with 49 CFR 192 for the duration of Pipeline operation.

EPA/COE *Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual* and did not identify any evidence of contaminants.

Construction of the Pipeline would cross three major and two intermediate waterbodies. Commonwealth would use open-cut methods to install the Pipeline across the three major waterbodies and the horizontal directional drilling (HDD) method for the two intermediate waterbody crossings. Commonwealth would restore the open-cut waterbody crossings in accordance with its *Wetland and Waterbody Construction and Mitigation Procedures (Procedures)* and *Workspace Restoration Plan*.¹⁰ Commonwealth would follow the protocols in its revised *HDD Contingency Plan*, which includes a detailed approach for responding to inadvertent surface releases of drilling fluids in the waterbodies under which the HDD would pass.

With implementation of the HDD method, revised *HDD Contingency Plan*, the FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan (Plan)*, Commonwealth's *Procedures* (which incorporate the FERC's *Procedures*)¹¹, we conclude that impacts on water resources would be adequately minimized or avoided and would not be significant.

Wetlands

Construction of the Terminal would affect about 95.9 acres of wetlands and result in the permanent loss of 89.6 acres of wetlands. Over 70 percent of this permanent impact would affect estuarine emergent wetlands, followed by estuarine forested, and estuarine scrub-shrub wetlands. To mitigate unavoidable wetland impacts at the Terminal, Commonwealth would purchase wetland mitigation bank credits at a quantity specified by the COE and Louisiana Department of Natural Resources Office of Coastal Management (OCM) to comply with the Clean Water Act.

Construction of the Pipeline facilities would affect a total of 43.6 acres of estuarine emergent wetlands, including construction impacts of the additional temporary workspace (ATWS) areas and a temporary access road. Approximately 0.3 acre of this impact would result in permanent wetland loss resulting from construction of the aboveground facilities. Following construction, the remaining disturbed areas, including the permanent right-of-way, would be restored in accordance with Commonwealth's *Procedures* and *Workspace Restoration Plan*. Part of Commonwealth's *Procedures* and *Workspace Restoration Plan* includes the potential to import fill to offset any loss of backfill volume when restoring the right-of-way.

With the implementation of Commonwealth's *Procedures* to restore wetlands within the temporary workspace (and permanent workspace for the Pipeline) and compliance with the COE's and OCM's mitigation requirements, we conclude that the impacts on wetlands would be adequately minimized.

Vegetation

Construction and operation of the Terminal facilities would permanently impact approximately 98.5 acres of vegetation habitat, resulting in the loss or conversion of 89.8 acres of wetlands and forested chenier habitat, 1.6 acres of tidal slough, and 0.8 acre of open land habitat into industrial land. All impacts

10 Commonwealth's Workspace Restoration Plan Rev. 2 was filed on May 23, 2022 as appendix A under accession number [20220523-5182](#).

11 The FERC Plan and Procedures are a set of baseline construction and mitigation measures developed to minimize the potential environmental impacts of construction on upland areas, wetlands, and waterbodies. The Plan and Procedures can be viewed on the FERC website at: <https://www.ferc.gov/sites/default/files/2020-04/upland-erosion-control-revegetation-maintenance-plan.pdf> and <https://www.ferc.gov/sites/default/files/2020-04/wetland-waterbody-construction-mitigation-procedures.pdf>.

on vegetation related to the Pipeline would occur in estuarine emergent wetland vegetation, as described above.

One vegetation community of special concern (Coastal Live Oak-Hackberry Forest natural community; also known as a chenier habitat) was identified by the FWS and Louisiana Department of Wildlife and Fisheries (LDWF) as present within the Terminal footprint. Permanent impacts from the Terminal would total 13.3 acres of chenier habitat (23.6 acres of chenier habitat at the Terminal site would not be affected by construction). Based on suggestions by LDWF, Commonwealth has proposed mitigation that includes fencing the chenier habitat that would not be affected by construction of the Terminal, eradicating the feral hogs that are present in the chenier habitat from the fenced areas, and preserving the fenced areas from development for the life of the Project.

With the implementation of the Commonwealth's *Workspace Restoration Plan* and its proposed mitigation measures, we conclude that Project impacts on vegetation resources would be mostly short-term and minor or adequately mitigated (with the purchase of mitigation credits as required by the COE and OCM to comply with the Clean Water Act).

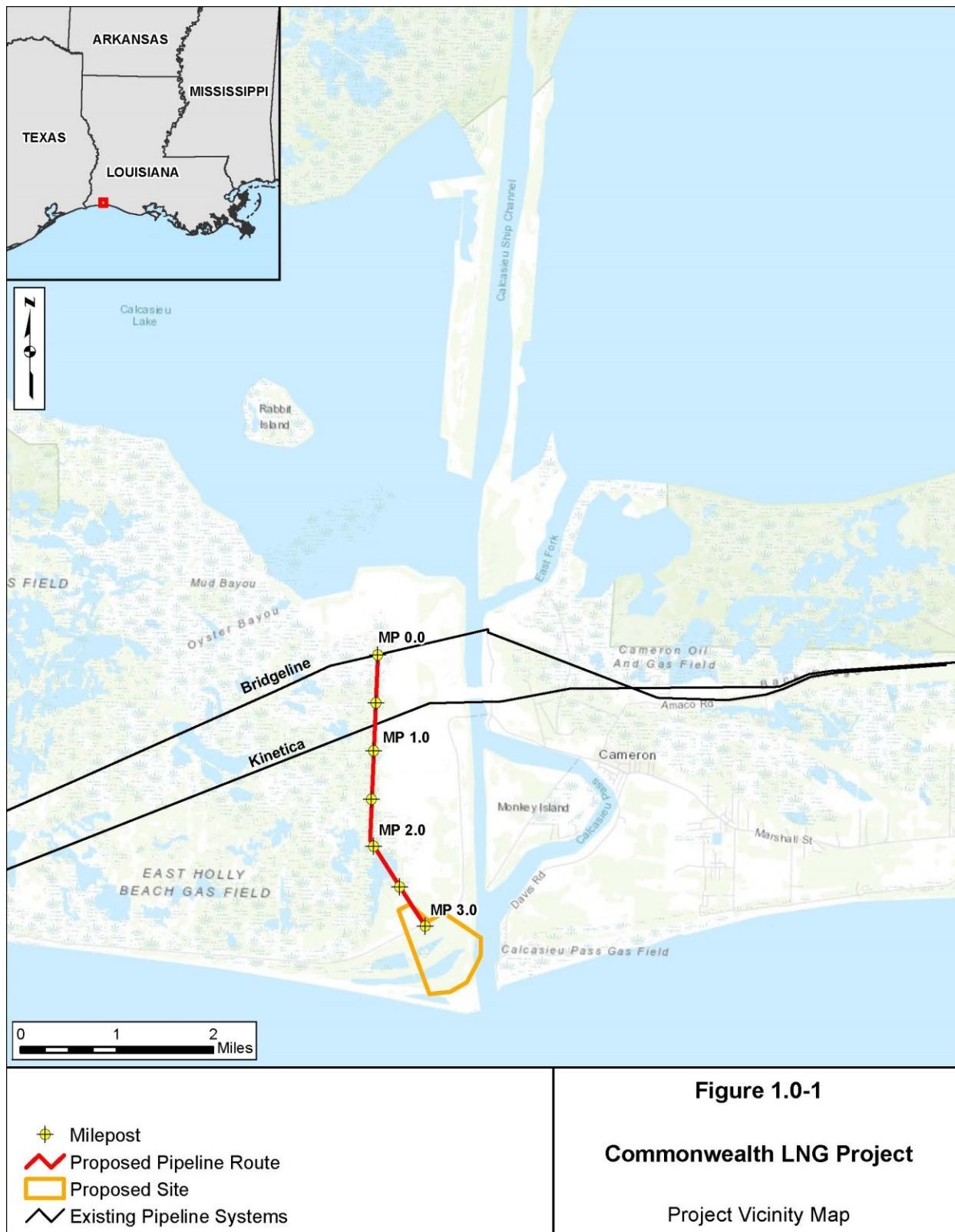
Wildlife and Aquatic Resources

Wildlife Resources

The primary impact on wildlife from construction of the Terminal and Pipeline would be the loss of estuarine emergent, scrub shrub, and forested wetland habitats and chenier habitat, which provide nutrients, cover, shelter, and water for a variety of terrestrial and aquatic wildlife species, including waterfowl, wading birds, nesting birds, raptors, mammals, reptiles, and amphibians. Construction of the Terminal and Pipeline could cause displacement, stress, and direct mortality of individual wildlife species that use these types of habitats. Operation of the Terminal would result in increased noise, lighting, and human activity that could disturb wildlife in the area and a reduction of usable habitat for most wildlife species currently inhabiting the area. However, much of the wildlife known to be present at the site (e.g., raccoons, nutria, waterfowl) are common species that are habitat generalists (with the notable exception of the eastern black rail, discussed in section 4.7.1.2) and are generally tolerant of anthropogenic activities. Operation of the Pipeline would require minimal lighting, activities, or other disturbances that would affect wildlife.

The wetland and chenier habitats in the Project area are especially important as potential habitat for migratory bird species, including songbirds, colonial nesting waterbirds, and raptors. The Project is within the Gulf Coast Prairie Bird Conservation Region and the Chenier Plain Important Bird area. Chenier habitat provides critical in-transit habitat for migrating birds prior to and after crossing the Gulf of Mexico. Commonwealth consulted with the FWS and LDWF to determine measures Commonwealth would implement to avoid and minimize impacts on migratory birds. Measures include attempting to adhere to a vegetation clearing-restriction window of March 1 through July 31, adhering to FWS-recommended conservation measures related to minimizing impacts from flares and lighting, conducting pre-construction field surveys for evidence of colonial nesting waterbird rookeries and consulting FWS and LDWF if any are found, and protecting chenier habitat present in the Project area that would not be affected by construction.

We conclude that constructing and operating the Project would not significantly affect wildlife populations and wildlife habitat. Commonwealth would minimize impacts on wildlife and habitat by implementing its mitigation and avoidance plans for impacts on wetlands and chenier habitat, by following the measures outlined in the FERC's *Plan* and Commonwealth's *Procedures* and *Workspace Restoration Plan*, and by adhering to avoidance and minimization methods recommended by the FWS and LDWF related to facility lighting, flare stack design and usage, and conducting nest surveys, as needed.



construction equipment and supplies in addition to the modular components of the Terminal during construction activities. During operations, Commonwealth would use the barge dock to moor tugboats and smaller vessels.

Construction of the marine facility would require excavation and dredging along the western shoreline of the Calcasieu Ship Channel to provide adequate space to berth LNG carriers and allow passage of commercial and recreational vessel traffic in the Calcasieu Ship Channel. Construction would require sheet piling within the berthing area and armoring of the adjacent shoreline (upstream and downstream) to prevent erosion.

2.1.1.4 Flare System

Commonwealth would install a flare system at the Terminal site for venting excess natural gas, if necessary, during maintenance, startup/shutdown, and upset activities. Two flare stacks (comprised of four flare systems) would be constructed, one associated with the liquefaction facilities and one associated with the marine facility. The liquefaction flare stack would rise to a height of 300 feet and would be the tallest structure at the site. It would contain one wet flare for warm relief streams, one dry flare for cold, cryogenic relief streams, and a spare flare capable of handling the load of either the wet or dry flares. The marine flare stack would rise to a height of 200 feet and would consist of one flare for low-pressure cryogenic vapor from the BOG and the vessel dock loading system. Outside of emergency situations, Commonwealth estimates flaring would be required for up to 30 days during startup of the Terminal (five days per liquefaction train) and then for no more than 12 hours during the first year of operation and 6 hours per year in subsequent years. A pilot flare at each stack would be lit at all times. The locations of the flare stacks are shown in figure 2.1-1.

2.1.1.5 Associated Infrastructure

Infrastructure associated with the Terminal would include establishment of a power supply and construction of access roads, storm protection and stormwater drainage systems, a spill containment system, and fire suppression facilities.

Power Generation

Commonwealth would construct an on-site, natural gas-fired simple cycle electric power generation plant. The generation plant would use three 75-mega volt amp natural gas turbine generators to produce the approximately 120 megawatts required for operation of the Terminal. Electrical power would be distributed throughout the Terminal infrastructure through common industrial electrical distribution systems (e.g., transformers, circuit breakers, motor control centers).

Commonwealth would also install two diesel stand-by generators with battery backup systems at the Project site to provide a source of essential backup power generation for critical equipment and plant shutdown if the electrical power system were to fail. Each generator would provide one megawatt of power. Diesel for the generators would be stored on-site in a 16,900-gallon capacity storage tank with secondary containment. The tank would store enough fuel for seven days of backup power generation.

Storm Protection and Stormwater Drainage Systems

Commonwealth would construct a storm protection system to encompass the majority of the Terminal including the liquefaction trains and LNG storage tanks. The marine facility, flare stacks, and maintenance and administrative buildings would not be within the storm protection system (see figure 2.1-1). The storm protection system would consist of a new concrete wall that would be 26 feet high on the south and east (windward) sides of the site, and 21 feet high on the north and west (leeward) sides. The

structure design would be determined during the final design of the Terminal. Commonwealth has committed to coordinating with the regulatory community, including NMFS, for design features that would minimize impacts of the culvert on aquatic species, wetlands, and EFH.

Construction Staging Areas

Commonwealth would use one temporary construction and laydown area for construction of the Terminal. The 13.1-acre laydown area would be adjacent to the administrative and maintenance buildings and extend between Highway 27/82 and the northern extent of the marine facility (see figure 2.1-1).

Moran Towing Relocation

Moran Towing of Lake Charles, LLC has a tugboat facility on the Calcasieu Ship Channel that is currently within the proposed footprint of the Terminal. Commonwealth and Moran Towing have agreed to relocate the tugboat facility to the eastern edge of the Terminal footprint, adjacent to the marine facility (see figure 2.1-1).

Park and Ride Facilities

Commonwealth would use two existing gravel parking lots adjacent to Highway 27 in Carlyss, Louisiana (approximately 40 miles north of the Terminal site) as Park and Ride facilities for workers to park off-site and be shuttled to the Project site during construction. Commonwealth would use an existing parking lot at the Southland Airport (Southland Airport Lot) for the duration of the expected 36- to 38-month construction period. The Southland Airport Lot is a 6.7-acre lot with a 600-vehicle capacity. Commonwealth would use at least part of the existing parking lot near the corner of Highway 27 and State Road 1256 (Circle K Lot) on an as-needed basis during peak construction periods. The Circle K Lot is a 9.9-acre lot with a 1,300-vehicle capacity.

2.1.2 Pipeline

Commonwealth proposes to construct a 3.0-mile-long, 42-inch-diameter natural gas pipeline to transport 1.44 Bcf/d of natural gas from three existing pipelines in Cameron Parish (dual 20-inch- and 12-inch-diameter Bridgeline pipelines and one 16-inch-diameter Kinetica pipeline) to the Terminal (figure 2.1-2). The interconnections with the Bridgeline and Kinetica pipelines are north-northwest of the proposed Terminal location. The Bridgeline interconnection would occur at the northern-most point of the Pipeline at milepost (MP) 0.0, and the Kinetica interconnection would occur at approximately MP 0.8. Commonwealth would construct aboveground facilities, elevated on pilings, at each interconnection point. The Bridgeline interconnection would contain a pig launcher and the Kinetica interconnection would contain a meter station.

As noted in section 2.1.1.1, the southern end of the Pipeline (MP 3.0) would terminate at a metering station within the Terminal site. The metering station would consist of a gas separator, a liquid storage and loadout facility, custody transfer meters, pressure regulators, emergency shutdown valves, gas analyzers, and a pig receiver.

2.2 LAND REQUIREMENTS

Commonwealth would disturb 230.5 acres of land and open water for construction of the Project and 153.1 acres during its operation. Of this, 152.8 acres would be permanently disturbed at the Terminal site (including the 55.0 acres for the marine facility during both construction and operation) and 0.3 acre would be permanently disturbed due to the aboveground facilities associated with the Pipeline. The

3.0 ALTERNATIVES

As required by NEPA and FERC policy, we evaluated reasonable alternatives to the Project and its various components to determine whether any such alternatives would be preferable to the proposed action. A reasonable alternative would meet the Project's purpose and would be technically and economically feasible and practical. The range of alternatives analyzed included the No-Action Alternative; system alternatives for the proposed Terminal; Terminal site location and layout design alternatives; alternative pipeline routes; and dredge spoil disposal location alternatives.

As part of the No-Action Alternative, we considered the effects and actions that could conceivably result if the proposed Project was not constructed. Under the analysis of system alternatives, we evaluated the ability of other existing, planned, or proposed (new or expanded) facilities to meet the Project objectives of Commonwealth. Our evaluation of alternative sites for the Terminal focused on several locations in the project region. Our evaluation of Terminal layout design alternatives focused on different Terminal configurations and our evaluation of alternative pipeline routes assessed different alignments of the Project pipeline. Finally, we also assessed onshore and offshore disposal alternatives of Commonwealth's dredge spoils.

The principal criteria for considering and weighing the alternatives for the Project were:

- the ability of each alternative to reasonably meet Commonwealth's primary objective of liquefying and exporting to foreign markets 8.4 MTPA of domestically produced natural gas sourced from existing interstate and intrastate pipeline systems in southwest Louisiana;
- the technical and economic feasibility and practicality of each alternative; and
- whether each alternative would provide a significant environmental advantage relative to the proposed undertaking.

Through environmental comparison and application of our professional judgement, each alternative is considered to a point where it becomes clear if the alternative could or could not meet the three evaluation criteria. Our environmental analysis and this evaluation consider quantitative data (e.g., acreage or mileage) and use common comparative factors such as total length, amount of collocation, and land requirements. In recognition of the competing interests and the different nature of impacts resulting from an alternative that sometimes exist (i.e., impacts on the natural environment versus impacts on the human environment), we also consider other factors that are relevant to a particular alternative and discount or eliminate factors that are not relevant or may have less weight or significance.

The alternatives were reviewed against the evaluation criteria in the sequence presented above. The first consideration for including an alternative in our analysis is whether it could satisfy the stated purpose of the Project. An alternative that cannot achieve the purpose for the project cannot be considered as an acceptable replacement for the Project and would not be considered further.

The second evaluation criteria is feasibility and practicality. Many alternatives are technically and economically feasible. Technically practical alternatives, with exceptions, would generally require the use of common construction methods. Economically practical alternatives would result in an action that generally maintains the price competitive nature of the proposed action. Generally, we do not consider the cost of an alternative as a critical factor unless the added cost to design, permit, and construct the alternative would render the project economically impractical.

Alternatives that would not meet the Project's objective or were not feasible were not brought forward to the next level of review (i.e., the third evaluation criterion). Determining if an alternative provides a significant environmental advantage requires a comparison of the impacts on affected resources

as well as an analysis of impacts on resources that are not common to the alternatives being considered. The determination must then balance the overall impacts and all other relevant considerations. In comparing the impact between resources, we also considered the degree of impact anticipated on each resource. Ultimately, an alternative that results in equal or minor advantages in terms of environmental impact would not compel us to shift the impacts to another location, potentially affecting a new set of landowners.

Commonwealth participated in our pre-filing process during the preliminary design stage of the Project (see section 1.0). This process emphasized identification of stakeholder issues, as well as identification and evaluation of alternatives that could reduce environmental impacts. Our analysis of alternatives is based on Project-specific information provided by the applicant, affected stakeholders, those comments received during Project scoping, publicly available information, our consultations with federal and state agencies, and our own research regarding the siting, construction, and operation of the proposed pipeline, LNG facilities, and dredge disposal location and their impacts on the environment (i.e., our alternatives analysis are comment and resource driven). Unless otherwise noted, we used the same desktop sources of information to standardize comparisons between the Project and each alternative (e.g., aerial photographs, U.S. Geological Survey [USGS] topographic maps, National Wetland Inventory [NWI] maps, agency consultations, and other publicly available information). As a result, some of the information presented in this section relative to the Project may differ from information presented in section 4.0, which is based on Project specific data derived from field surveys and engineered drawings.

3.1 NO-ACTION ALTERNATIVE

NEPA requires the Commission to consider and evaluate the no-action alternative. According to CEQ guidance, in instances involving federal decisions on proposals for projects, no-action would mean the proposed activity would not take place and the resulting environmental effects from taking no-action would be compared with the effects of permitting the proposed activity. Further, the no action alternative provides a benchmark for decisionmakers to compare the magnitude of environmental effects of the proposed activity and alternatives.

Thus, under the No-Action Alternative, the Project would not be developed and Commonwealth's objective of liquefying and exporting natural gas to foreign markets would not be realized. In addition, the potential environmental impacts discussed in section 4.0 of this EIS would not occur.

During scoping, we received a comment regarding whether apparently unsubscribed LNG capacity at several existing, proposed, or planned LNG Terminals could be contracted and combined to meet the projected demand for LNG. While we recognize that liquefaction capacity may not be fully subscribed at other Terminals based on contracts executed as of the writing of this EIS, the DOE's export approval is a determination that the export is in the public interest. Therefore, we will not speculate that any portion of the liquefaction capacity of other LNG terminals is in "excess" or available as an alternative for use by Commonwealth to meet its Project objectives.

The No-Action Alternative might result in end users of LNG making different arrangements to meet their needs. Although it is speculative to predict what actions might be taken by policymakers or end users if the No-Action Alternative is selected, it is possible that renewable energy sources (e.g., solar power), traditional energy sources (e.g., coal or fuel oil), or traditional long-term energy sources (e.g., nuclear power) could be used in lieu of the Project. But the location of the facility and use of the fuel (e.g., electricity, heating, industrial feed stock, etc.) would also be speculative. In addition, alternative energy sources would not meet the Project objective of liquefying natural gas for export and are beyond the scope of this EIS.

We have prepared this EIS to inform the Commission and stakeholders about the expected impacts that would occur if the Project were constructed and operated. The Commission will determine the Project need and could choose the no-action alternative.

3.2 SYSTEM ALTERNATIVES

We received comments from the public expressing concern that there may be system alternatives that would cause fewer land impacts and that these alternatives may be better suited to provide the LNG capacity that Commonwealth is proposing. The purpose of the Project is to liquefy and export 8.4 MTPA of natural gas to FTA and non-FTA countries. We reviewed system alternatives in the Gulf Coast region to evaluate the ability of other existing, modified, approved, planned, or proposed facilities to meet the Project purpose and to determine if a system alternative exists that would be technically and economically feasible and have a significant environmental advantage over those impacts associated with the Project. In the case of the Project, it must also be compatible with project parameters stated in Commonwealth's DOE applications for LNG export to FTA and non-FTA countries. The status identified for each system alternative (e.g., planned, proposed, or approved²⁷) is current as of the time this EIS being written, and is subject to change over time. By definition, implementation of a system alternative would make construction of all or some of the proposed facilities unnecessary; conversely, infrastructure additions or other modifications to the system alternative may be required to increase capacity or provide receipt and delivery capability consistent with that of the proposed facilities. Such modifications may result in environmental impacts that are less than, comparable to, or greater than those associated with construction and operation of the proposed facilities. It should also be noted that any future expansion plans do not need to be addressed in this document as expansion of the terminal would require an additional NEPA document. For this reason, and because the impacts of hypothetical expansion are not reasonably foreseeable, they are not addressed here.

The system alternatives identified include both existing LNG terminals with planned, proposed, or authorized expansions, as well as new LNG terminals planned, proposed, or authorized on greenfield sites. We received a comment from the public requesting that the comparison of the Project with potential system alternatives be conducted as a comparison of the total liquefaction capacities of both the Terminal and the system alternatives. These potential system alternatives, and their total MTPA capacities, are identified in table 3.2-1 below. Our analysis was predicated on the assumption that each project has an equal chance of being constructed and would therefore be available as a potential alternative. However, market forces will ultimately decide which and how many of these facilities are built.

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Proposed projects are projects for which the proponent has submitted a formal application to the FERC; planned projects are projects that are either in pre-filing or have been announced but have not been proposed. Approved projects are projects that have received FERC authorization.

TABLE 3.2-1

Liquefied Natural Gas Export Terminals with Planned, Proposed, or Approved Liquefaction Projects Along the Gulf Coast – Summary Profile of System Alternatives

| Project | MTPA | FERC Status ^{a/} | In-Service Target Date |
|---|-------|------------------------------|------------------------|
| EXISTING LNG TERMINAL EXPANSIONS | | | |
| Approved Projects | | | |
| Cameron LNG Trains 1-3 | 14.95 | In-Service | 2020 |
| Freeport LNG Trains 1-3 | 15.3 | In-Service | 2020 |
| Corpus Christi LNG Trains 1-3 | 16.9 | In-Service | 2021 |
| Sabine Pass LNG Trains 1-6 | 32.1 | In-Service | 2022 |
| Golden Pass LNG | 15.6 | Under construction | 2024 |
| Cameron LNG Expansion Train 4 | 6.75 | Approval received 5/5/16 | 2026 |
| Lake Charles/Trunkline LNG | 16.45 | Approval received 12/17/15 | 2028 |
| Freeport LNG Expansion Train 4 | 5.1 | Approval received 5/16/19 | 2026 |
| Gulf LNG Liquefaction Company | 10.85 | Approval received 7/16/19 | 2024 |
| Corpus Christi LNG Stage 3 | 11.45 | Approval received 11/22/19 | 2024 |
| NEW LNG TERMINALS | | | |
| Approved Projects | | | |
| Driftwood LNG | 27.6 | Under construction | 2026 |
| Venture Global Calcasieu Pass | 12.0 | In-Service | 2022 |
| Magnolia LNG | 8.0 | Approval received 4/15/16 | 2023 |
| Delfin LNG Deepwater Port | 9.2 | Approval received 9/28/17 | 2024 |
| Port Arthur LNG Phase 1 | 13.5 | Approval received 4/18/19 | 2023 |
| Venture Global Plaquemines LNG | 20.0 | Under construction | 2024 |
| Texas LNG | 4.0 | Approval received 11/22/19 | pending ^{b/} |
| Rio Grande LNG | 27.0 | Approval received 11/22/19 | 2026 |
| Magnolia LNG Amendment | 0.8 | Approval received 10/7/2020 | 2026 |
| Proposed Projects | | | |
| Port Arthur LNG Phase 2 | 13.5 | Application filed 2/19/20 | 2028 |
| Venture Global CP2 LNG | 20.0 | Application filed 12/2/2021 | 2026 |
| Planned Projects | | | |
| Port Fourchon LNG | 5.0 | Pre-filing initiated 8/21/17 | pending |
| Venture Global Delta LNG | 24.0 | Pre-filing initiated 4/17/19 | pending |

^{a/} Approved indicates the project has been certificated by the Commission.

^{b/} Construction for the Texas LNG project has not begun; no estimated start of construction is available

As identified in table 3.2-1, there are seven existing LNG terminal sites along the Gulf Coast in the southeastern United States with approved, proposed, and/or planned expansion(s) to export to FTA countries. We also identified 11 new LNG terminal projects approved, proposed, or planned on greenfield sites. Each of the seven expansion projects and 11 new LNG projects was evaluated as a potential system alternative to the Project.

Each proposed project is authorized from or has applied to DOE to export to FTA countries. The NGA, as amended, has deemed FTA exports to be in the public interest; therefore, we cannot speculate or conclude that excess capacity is available from the listed proposed projects to accommodate the purpose and need of the Commonwealth LNG Project. Consequently, we must conclude Commonwealth's proposed export capacity at any other existing or proposed LNG facility would require an expansion or new facilities. Some of the facilities, such as Freeport LNG, are unlikely to have the available acreage to expand its facilities to accommodate the purpose and need of the Project. For those remaining LNG facilities, there may be available acreage to expand the existing or proposed facilities. However, expansion would require similar structures as the facilities proposed for the Terminal, resulting in environmental impacts similar to the Project. These systems alternatives, therefore, offer no significant environmental advantage over the proposed Project and are not considered to be preferable.

3.3 ALTERNATIVE TERMINAL SITES

To minimize the potential environmental impacts from the proposed action, we evaluated potential alternative sites for the Project within the Gulf Coast region that meet the following criteria related to site size and zoning, marine operations, and infrastructure.

Site size and availability:

- site has sufficient acreage for the current Project design (at least 200 acres); and
- the surrounding land use is compatible for construction of an LNG Terminal.

Marine Operations:

- site has waterfront access sufficient to construct a berth for LNG carriers with capacities of up to 216,000 m³ (at least 1,500 feet of shoreline);
- site is adjacent to a navigational channel deep enough to accommodate LNG carriers with capacities of up to 216,000 m³ (depth of at least 40 feet); and
- navigational channel within proximity of the site is wide enough to accommodate a turning basin.

Infrastructure:

- site has reasonably close access to a natural gas supply that can provide sufficient volumes of natural gas to the Project;
- site has reasonable proximity to utilities (water and electricity); and
- site has suitable road and highway access.

We received multiple comments from the public requesting Commonwealth to consider specific alternative locations for the Terminal site. The alternative sites included the parcel of privately owned land north of the Cameron Ferry landing on Highway 27/82, and south of St. John's Island; the land adjacent to the Omega Protein, Inc. fish-processing plant approximately 0.75 mile north of the proposed Terminal location; on Monkey Island; and along the lower Mississippi River in Plaquemines Parish, Louisiana. These suggestions are included in our assessment as Alternative sites 1, 2, 3A, and 5, respectively.

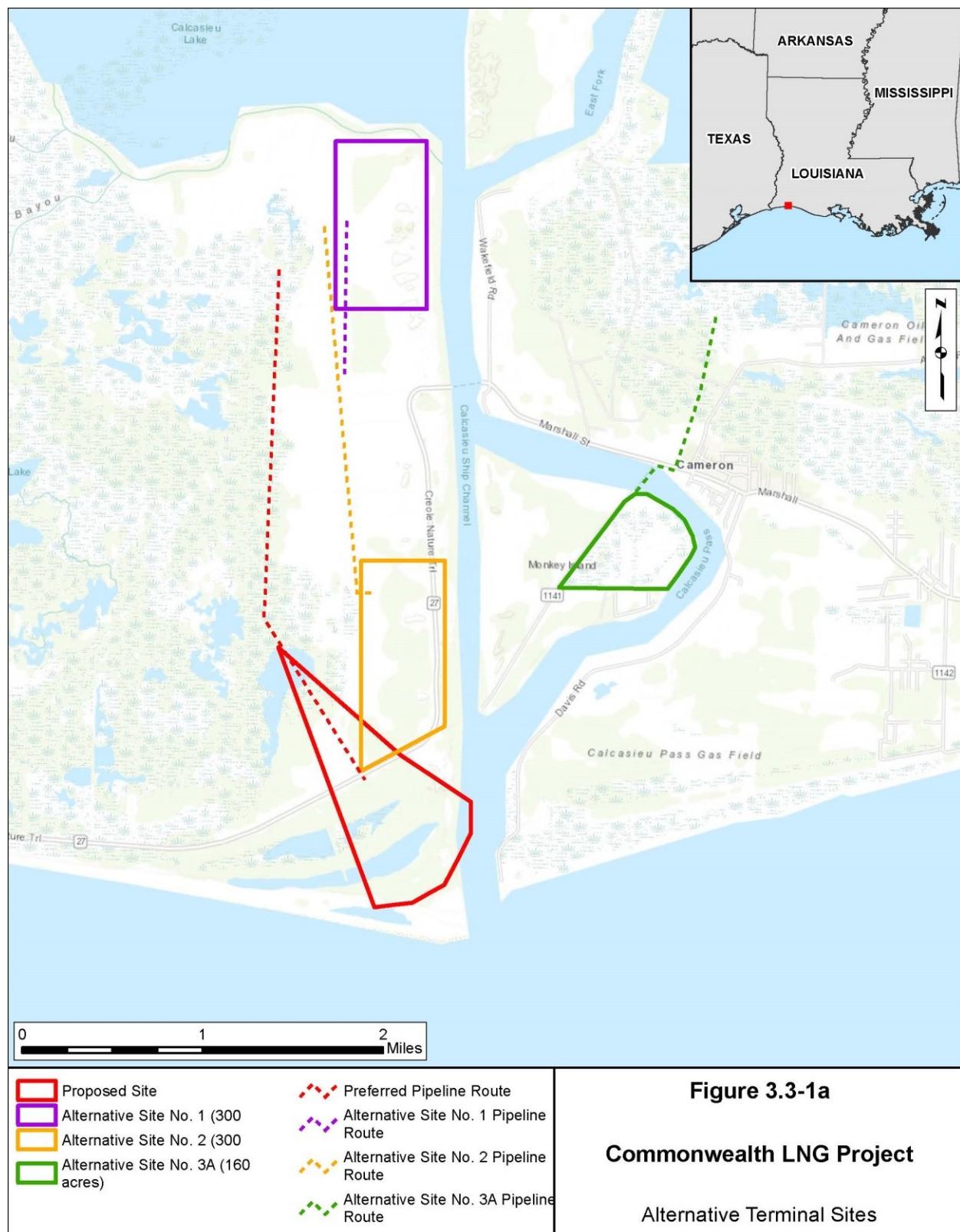
We identified three additional alternative sites and the proposed site for assessment based on the above criteria during the Project's initial development. However, based on the lack of availability of several of those sites over time, at our request Commonwealth identified three additional alternatives (Alternative Sites 6-8). The locations of the sites are provided in figures 3.3-1a-e and their attributes are summarized in table 3.3-1. We have received comments from the public expressing concern that including the alternative sites that are no longer commercially available in the EIS presents a false appearance of considering a wide range of alternatives despite some of the alternatives not being available. We are including here the sites that are no longer commercially available to identify that the sites were previously considered as they are sites recommended as alternatives in the public comments. However, we do not provide in-depth descriptions of the potential environmental advantages of these sites given that under section 3 of the Natural Gas Act these alternatives are no longer feasible.

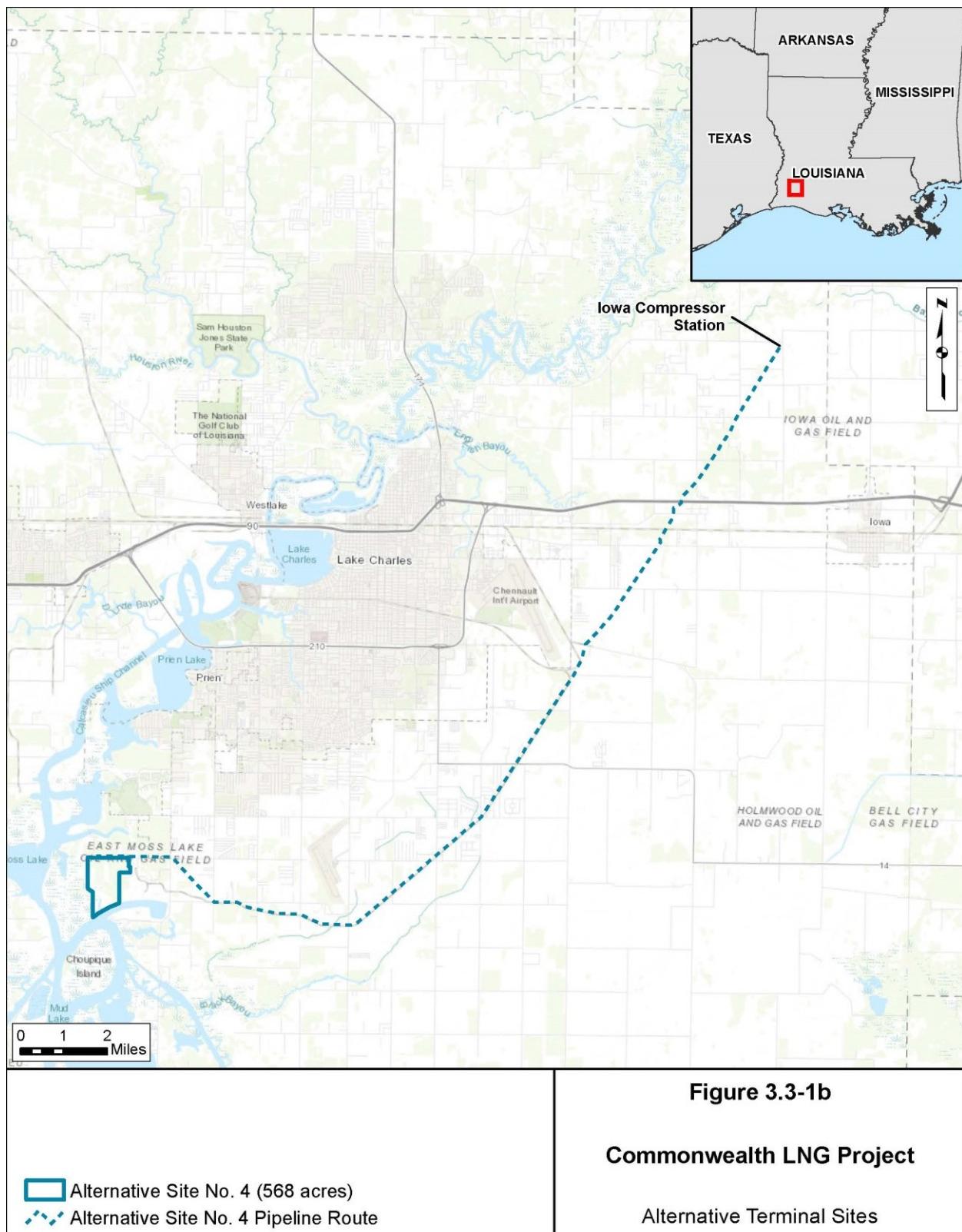
We also received a comment that the proposed Project site is the only site that would directly impact protected wildlife species and that typical wetland mitigation plans would not resolve impacts on the eastern black rail, a bird species federally classified as threatened and likely present at the Project site, because of the limited habitat in the region where they can be found. Threatened and endangered species consultation with the FWS has not been conducted for the alternative sites; therefore, we do not have an official accounting of the potential presence of protected species at the alternative sites. However, an unofficial inquiry of the FWS' Information for Planning and Consultation online system²⁸ indicates protected species may be present at all eight of the alternative sites, including the potential for presence of the eastern black rail at six of the eight alternative sites. Project impacts on the eastern black rail are addressed in section 4.7.1. In short, the FWS issued a Biological Opinion that the Project is not likely to jeopardize the continued existence of the eastern black rail. The FWS provided mandatory Reasonable and Prudent Measures that were deemed necessary and appropriate by the FWS for Commonwealth to follow to monitor and minimize impacts on eastern black rails. Further, the FWS provided a suite of Terms and Conditions and Monitoring and Reporting Requirements for Commonwealth to abide by in association with the Reasonable and Prudent Measures. Commonwealth accepted the terms and conditions of the BO on October 6, 2021.

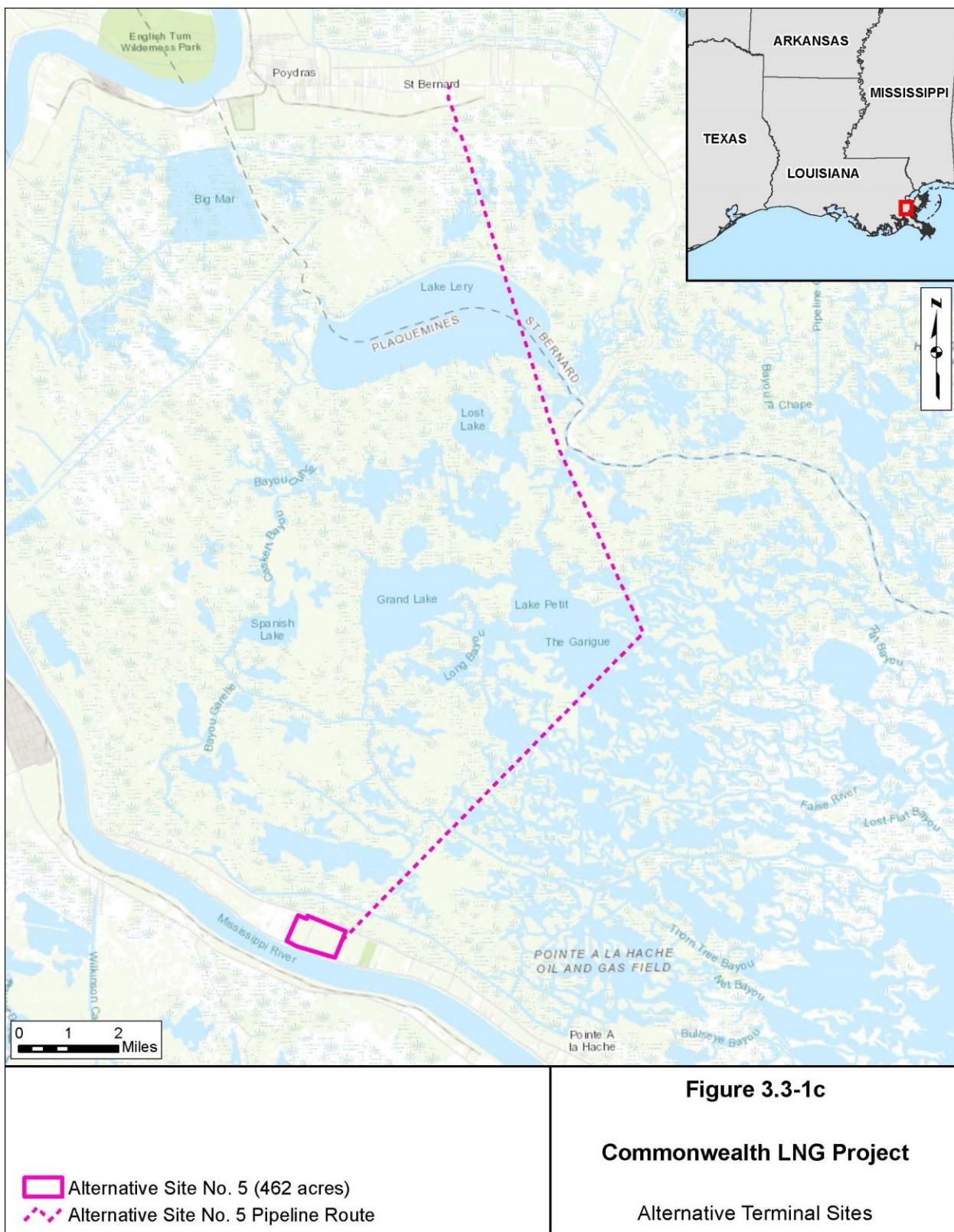
During the public comment period for the draft EIS, we received a comment from the public suggesting the alternatives analysis was not conducted in a quantitative manner and recommended that FERC use tools such as the CPRA Coastal Master Plan Viewer or the National Fish and Wildlife Foundation's Coastal Resilience Evaluation and Siting Tool. The commenter noted that the CPRA Coastal Master Plan Viewer showed the Terminal site as falling within the tool's highest flood risk category (16-feet-plus). Table 3.3.1 provides a quantitative comparison of each of the proposed Alternative Sites and while the National Fish and Wildlife Foundation's Coastal Resilience Evaluation and Siting Tool provides quantitative values for a suite of resource parameters, they are not able to integrate many of the parameters in table 3.3.1, such as dredging volumes and acreage impacts from feed gas pipelines, that must also be weighed. We also note that the CPRA Coastal Master Plan Viewer shows approximately two-thirds of the Terminal site to be in the 7 to 9 feet flood risk and even the 1 to 3 feet flood risk in some scenarios. Additionally, Alternative Sites 1, 2, 4, 6, and 7 all contain large portions, if not the entirety of the sites, within the 16-foot-plus range and Alternative Sites 3A and 5 contain portions of the site within the next range of flood risk at 13 to 15 feet. Alternative site 8 is in Texas and therefore does not have CPRA data associated with it; however, much of the site is wetland habitat and would therefore be expected to have comparable flood risk as Alternative Sites 1, 2, 4, 6, and 7.

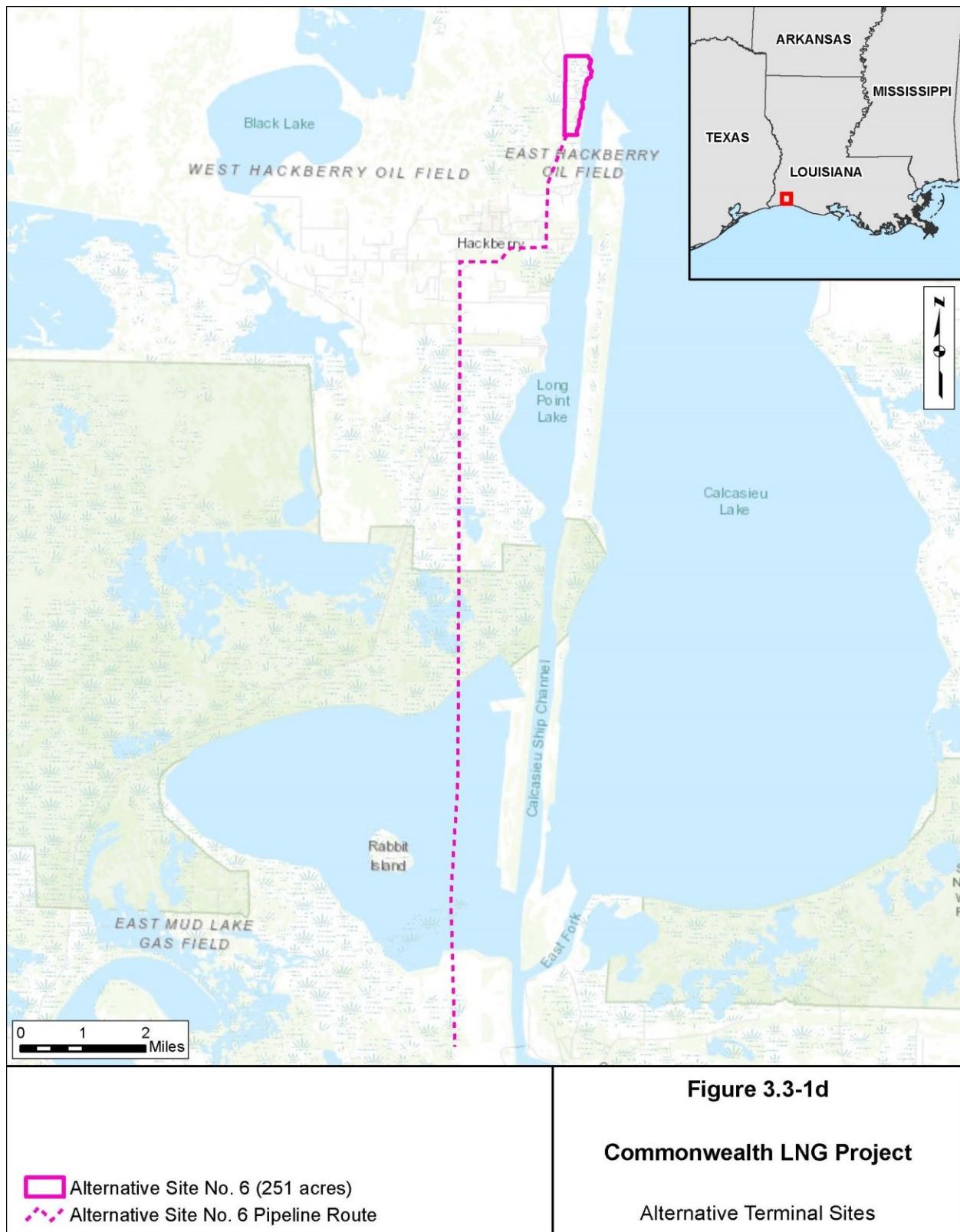
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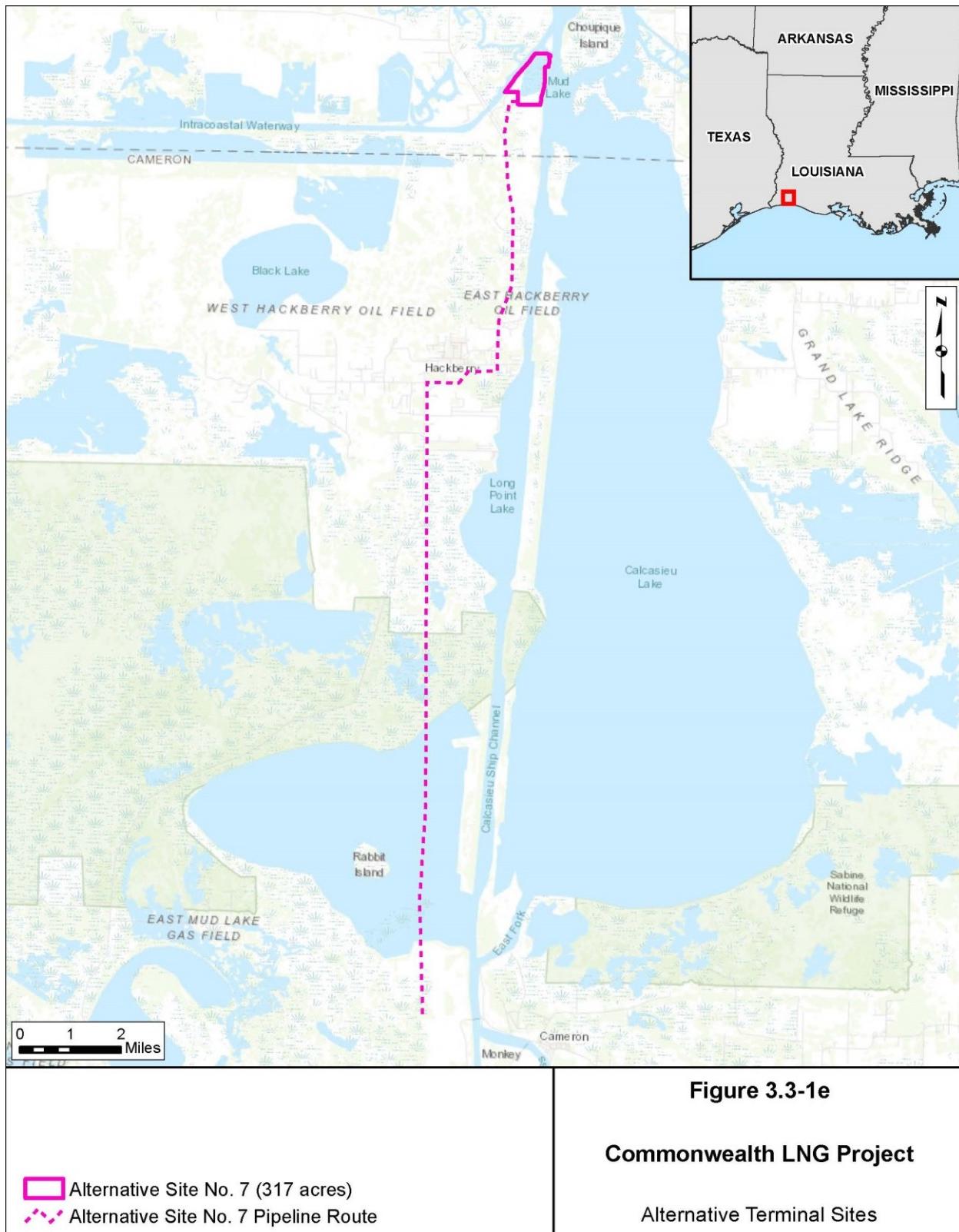
See <https://ipac.ecosphere.fws.gov/>.

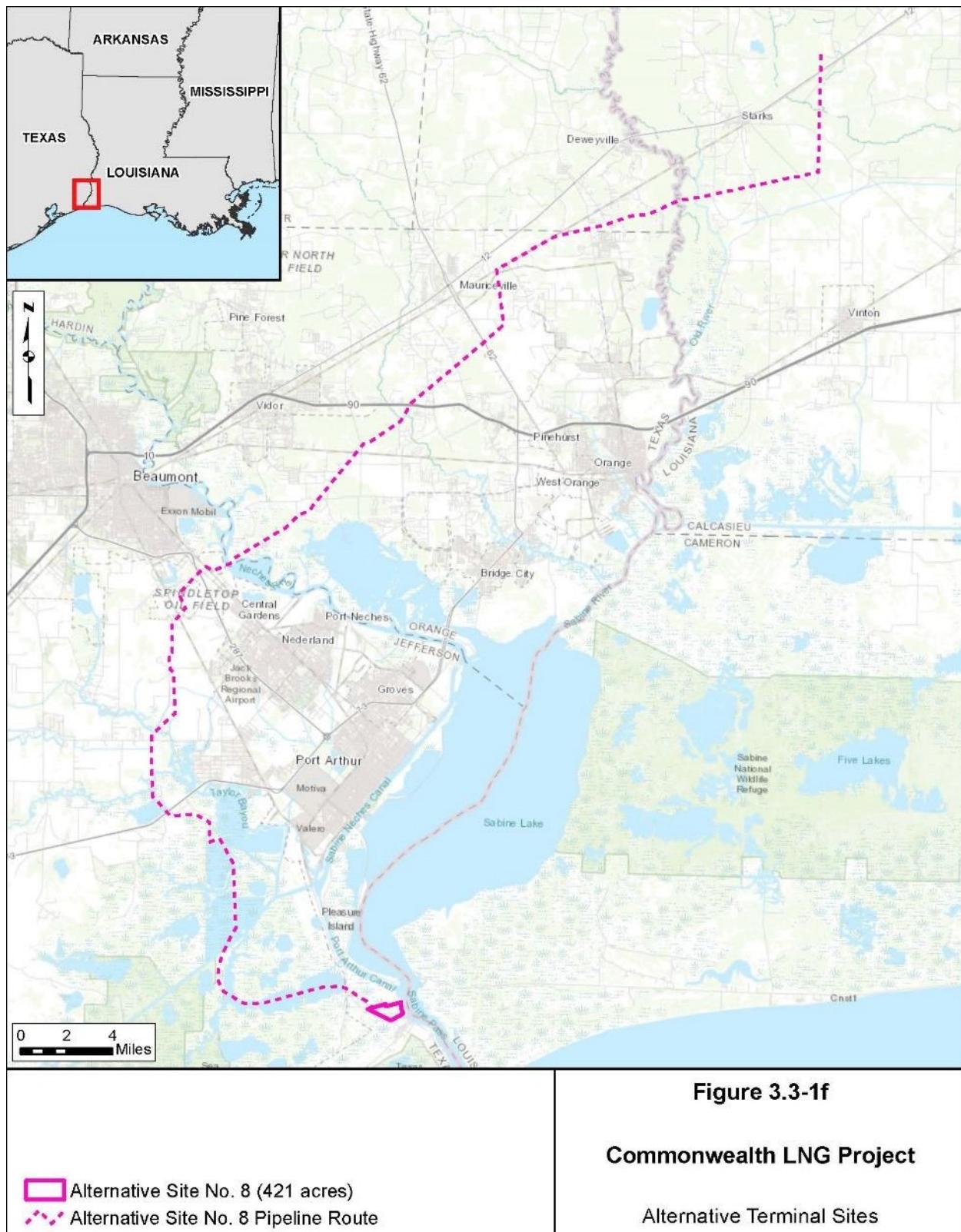












| Commonwealth LNG Terminal Alternative Sites 1-8 Location Comparison | | | | | | |
|---|---------------|--------------------|--|--------------------|--------------------|--------------------|
| Criteria | Proposed Site | Alternative Site 1 | Alternative Site 2 a/ <u>Alternative Site 3A a/</u> | Alternative Site 4 | Alternative Site 5 | Alternative Site 6 |
| Site Size and Availability | | | | | | |
| Acres available for construction of Project (200 acres needed) | 393 | 300 | 189 | 161.9 | 568 | 462 |
| Availability of site for purchase or lease | Yes | No | No | Yes | Yes | Yes |
| Marine Operations | | | | | | |
| Linear feet of waterfront available (1,500 needed) | 2,700 | 4,900 | 5,400 | 0 b/ NA | 3,650 | 5,624 |
| Turning basin construction required | No | Yes | Yes | Yes | Yes | Yes |
| Dredging Volume (cubic yards) | 1,730,000 | 4,800,000 | 6,010,000 | NA c/ 1,340,000 | 0 d/ 5,675,000 | 5,675,000 |
| Approximate distance from Bar Channel Entrance (miles) | 32.5 | 35.9 | 33.6 | 33.1 | 56 | 76 e/ 49.4 |
| Infrastructure | | | | | | |
| Approximate distance to natural gas feed pipelines (miles) | 3.04 | 0.7 | 2 | 1.2 | 23.2 | 20.2 |
| Distance to utilities (miles) | 0 | 0.7 | 0 | 0 | 1.5 | 0 |
| Distance to road and/or highway (miles) | Adjacent | Adjacent | Adjacent | 0.3 | Adjacent | Adjacent |
| Site Environmental Factors | | | | | | |

TABLE 3.3-1

Commonwealth LNG Terminal Alternative Sites 1-8 Location Comparison

| Criteria | Proposed Site | Alternative Site 1 | Alternative Site 2 a/ | Alternative Site 3A a/ | Alternative Site 4 | Alternative Site 5 | Alternative Site 6 | Alternative Site 7 | Alternative Site 8 |
|---|----------------------|---------------------------|------------------------------|-------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| NWI wetlands mapped (acres) f/ | 184 | 132 | 73 | 159.7 | 249 g/ | 13 | 155 | 31.3 | 402.3 |
| NWI wetlands mapped (percent of site) | 46.8 | 44.0 | 24.3 | 98.6 | 43.8 g/ | 2.8 | 61.8 | 9.9 | 95.6 |
| USGS National Hydrography Dataset Streams (feet) requiring filling | 1,060 | 0 | 0 | 0 | 2,813 g/ | 0 | 0 | 0 | 0 |
| Approximate Distance to Residences (miles) | 2.5 h/ | 2.5 | 2.0 | 1.0 | 1.25 | 0.03 – 0.1 | 0.7 | 0.6 | 0.3 |
| Feed Gas Pipeline Environmental Factors | | | | | | | | | |
| NWI wetlands crossed (acres) i/ | 24 | 4 | 17 | 7.5 | 17 | 178 | 113.7 | 142.4 | 80.9 |
| Roads crossed | 1 | 0 | 0 | 1 | 26 | 1 | 6 | 8 | 33 |
| Co-location with existing right-of-way (miles) | 0 | 0 | 0 | 0.1 | 23 | 12 | 0.6 | 4.2 | 69.4 |
| Residences Within 50 feet | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 1 | 4 |
| Environmental Justice Communities | | | | | | | | | |
| Site parcel crosses an environmental justice community (yes/no) | N | N | N | Y | N | N | Y | N | N |
| Feed gas pipeline crosses an environmental justice community (yes/no) | N | N | N | Y | Y | Y | Y | Y | Y |

TABLE 3.3-1

Commonwealth LNG Terminal Alternative Sites 1-8 Location Comparison

| Criteria | Proposed Site | Alternative Site 1 | Alternative Site 2 a/ | Alternative Site 3A a/ | Alternative Site 4 | Alternative Site 5 | Alternative Site 6 | Alternative Site 7 | Alternative Site 8 |
|--|----------------------|---------------------------|------------------------------|-------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| <u>a/</u> Alternatives 2 and 3A include only the parcels available at the time the analysis was completed. | | | | | | | | | |
| b/ Linear feet of waterfront at this site noted as zero because the site's location on the Cameron Loop Channel precludes LNG carriers from begin able to access the site. | | | | | | | | | |
| c/ Dredge volume not provided because dredging any sized turning basin at this location was deemed infeasible. | | | | | | | | | |
| d/ Dredge volume at this site is noted as zero because the Mississippi River at this location is wide and deep enough such that no turning basin would need to be required. | | | | | | | | | |
| e/ Alternative sites 5 and 8 are not accessed through the Bar Channel; therefore, the Alternative 5 measurement is the distance from Alternative 5 to Southwest Pass, where the Mississippi River meets the Gulf of Mexico; the Alternative 8 measurement is the distance from the entrance to the Sabine Pass Channel, which access the Sabine Pass Channel on which Alternative 8 is located.. Alternative 8 is approximately 7 miles from the Gulf of Mexico. | | | | | | | | | |
| f/ Acreages for all of the alternative Terminal sites represent National Wetlands Inventory (NWI) wetlands mapped by the U.S. Fish and Wildlife Service. Because the boundaries of jurisdictional wetlands may differ from NWI wetlands, the wetland acreage numbers provided in this table are different than those reported elsewhere in this EIS for the proposed Terminal. | | | | | | | | | |
| g/ The Alternative Site 4 parcel contains an approximate 125-acre upland area that fronts the Calcasieu Industrial Canal with approximately 2,600 feet of shoreline. If Commonwealth restricted the location of the Terminal to this block of upland the impacts on NWI wetlands and USGS National Hydrography Dataset Streams would be much lower than the values presented in this table. | | | | | | | | | |
| h/ There is also an RV pad that serves as a secondary residence site for the landowner approximately 0.3 mile west of the proposed Terminal footprint. | | | | | | | | | |
| i/ Acreage based on a standard 110-foot-wide construction right-of-way. | | | | | | | | | |
| j/ The distance assessed for environmental justice block groups is discussed in section 4.9.12.2. | | | | | | | | | |

All site alternatives are zoned for heavy industrial use or have no zoning limitations and are in industrial areas. With respect to air permitting, the proposed Terminal site and all eight alternative sites are within attainment air quality zones. Screening criteria used to evaluate the feasibility and potential environmental advantage of each site to select it for further consideration included the availability of land for purchase or long-term lease and a significant reduction in impacts on environmental resources.

3.3.1 Proposed Terminal Site – Commonwealth, Cameron Parish, Louisiana

The proposed Terminal site is on 393 acres of property approximately 2.5 miles southwest of the Town of Cameron in Cameron Parish, Louisiana. The southern border of the site is approximately 900 feet north of the Gulf of Mexico and the site has about 2,700 feet of frontage on the Calcasieu Ship Channel. It is in a remote, industrial region over 2.5 miles from the nearest residential neighborhood.²⁹ The site is not in an environmental justice community. There is a concrete pad about 0.15 mile west of the Terminal site that is used as an RV parking site by the owner. The proposed Pipeline route would be 3.0 miles long, crossing approximately 24 acres of wetlands and one road.

This site is made up of developed land, open land, open water, cheniers, and wetlands. NWI mapping indicates that approximately 47 percent (184 acres) of the property contains mapped wetlands, and 1,060 feet of National Hydrographic Dataset (NHD)-mapped streams would be impacted. Commonwealth has sited the Terminal to avoid about 48 percent of the wetlands at the site. The chenier habitat, although generally degraded, is rare and important habitat for migratory birds and is not present at any of the alternative sites. Commonwealth is working with federal and state agencies to avoid and minimize the Project effects on wetland and chenier habitat and to provide sufficient mitigation for the unavoidable impacts (see sections 4.4 and 4.6).

Dredging and/or construction at the proposed Terminal site and each of the alternative sites would impact EFH. Each site would require some amount of mitigation for impacts on wetlands and EFH. The channel configuration at the proposed Terminal site would require less dredging for development and maintenance compared to five of the seven other alternatives, for which dredging volumes were considered, due to its location and the ability to use an existing turning basin.³⁰ The number of vessels transiting to the Terminal would remain the same for each alternative; however, the transit distance in the Calcasieu Ship Channel would be shortest to the proposed Terminal site. The proposed site also would have the shortest approach through the Bar Channel from the Gulf and has sufficient existing road/highway access.

3.3.2 Alternative Site 1 – North of Cameron Ferry Landing, Cameron Parish, Louisiana

Alternative Site 1 is a 300-acre parcel of privately owned land north of the Cameron Ferry landing on Highway 27/82, and south of St. John's Island. This site was available at the time that alternatives were first considered; however, it has since become unavailable. Therefore, under section 3 of the Natural Gas Act, this alternative is no longer feasible and was not carried forward for additional consideration.

3.3.3 Alternative Site 2 – South of Cameron Ferry Landing, Cameron Parish, Louisiana

Alternative Site 2 is a 300-acre parcel of privately owned land south of the Cameron Ferry landing in Cameron Parish, Louisiana. Evaluation of this site as an alternative was requested by a local landowner.

29 There is one residential camp site and a commercial property within the Project boundary; both would be removed or relocated according to negotiated terms. There is also an RV pad that serves as a secondary residence site for the landowner about 0.3 mile west of the Terminal.

30 Only 7 alternatives have dredging volumes for comparison because the location of Alternative Site 3A on the Cameron Loop Channel precludes the possibility of LNG carriers transiting to the site. Commonwealth intends to use the Calcasieu Pass LNG turning basin on the east side of the Calcasieu Ship Channel, across from the Project (see FERC docket number CP15-550-000).

The area is zoned for heavy industrial use. It is also on the west bank of the Calcasieu Ship Channel, with a channel frontage of approximately 5,400 feet, and is 0.7 mile north of the Gulf of Mexico shoreline. Highway 27/82 passes from north to south through the eastern quarter of the site. This site was available at the time that alternatives were first considered; however, it has since become unavailable. A portion of the site (26 percent) is no longer commercially available, and it is unlikely that the remaining land would be of sufficient size to support the proposed Project. Highway 27/82 runs through the center of the site and would need to be relocated from its current location to accommodate the footprint of an LNG terminal and avoid having the highway pass among the terminal facilities. Under section 3 of the Natural Gas Act, this alternative is no longer feasible and was not carried forward for additional consideration.

3.3.4 Alternative Site 3A – Monkey Island, Cameron Parish, Louisiana

Alternative Site 3A is a 161.9-acre parcel of privately owned land on Monkey Island in Cameron Parish, Louisiana. While Monkey Island is a 450-acre area of land, Monkey Island LNG and CP2 LNG hold lease options for the majority of the site. Therefore, only the unleased area was assessed as part of this alternative. The site is across from the proposed Terminal site on the Calcasieu Ship Channel, approximately 1.2 miles north of the Gulf of Mexico shoreline. The area is zoned for heavy industrial use, and the closest residences are about 0.2 mile from the site; however, no road/bridge access to the island is present. A heavy haul bridge/road would have to be constructed to access the site. The site is also part of an environmental justice community (Census tract 9702.01 block group 3). Approximately 98.6 percent (159.7 acres) of the site is mapped as NWI wetland. The site would require approximately 1.2 miles of pipeline to reach the Kinetica and Bridgeline feed gas pipeline systems. The pipeline would cross the Calcasieu Ship Channel (requiring horizontal directional drilling) and impact approximately 7.5 acres of NWI-mapped wetlands.

The only waterfront available is along the barge channel and would not support construction of a turning basin. Construction of a turning basin would require additional dredging north or south of the island. Navigation of LNG carriers to the site could pose safety hazards due to the narrow channel between Monkey Island and the town of Cameron. The site has no road access to the mainland and development of a heavy-haul bridge and access road to support the facility would cause additional impacts on aquatic, EFH, and water resources (e.g., increases in turbidity and construction noise), as well as impacts on businesses and/or residences in Cameron where the bridge would connect to the mainland. The bridge would also limit the size and types of vessels that could traverse through the channel between Cameron and Monkey Island, including LNG carriers. Given the lack of existing infrastructure, its location being part of an environmental justice community, the potential environmental disadvantages, and the feasibility limitations (especially the lack of turning basin and navigation of LNG carriers), Alternative 3A was not carried forward for additional consideration.

3.3.5 Alternative Site 4 – Industrial Canal West of ALCOA Plant, Calcasieu Parish, Louisiana

Alternative Site 4 is a 568-acre parcel situated on the north side of the Calcasieu River Industrial Canal, approximately 9 miles southwest of the City of Lake Charles and 24 miles north of the Gulf of Mexico shoreline. The site has a shoreline frontage of about 3,650 feet. Two authorized LNG projects are immediately east of the site on opposite sides of the Industrial Canal: Lake Charles LNG on the north side of the canal and Magnolia LNG on the south side of the canal. The site is not within an environmental justice community. The site has no existing roads or utilities and approximately 49 percent (282 acres) of the site is mapped as NWI wetland. The site is commercially available for purchase or long-term lease. The site would require approximately 23.2 miles of pipeline, extending northeast of the site, to reach a feasible feed gas pipeline system (connecting to the Kinetica and Bridgeline systems at the same location as the proposed Pipeline would not be feasible). The pipeline would cross 26 roads and approximately 17 acres of NWI-mapped wetlands.

LNG carriers calling at Alternative Site 4 would have to transit an additional 24 miles up the Calcasieu Ship Channel, increasing encounters with ship traffic en route. There could be delays due to anchorage times to wait for other LNG tankers transiting in the opposite direction, which would result in an increase in air emissions from the LNG carriers and tugboats. Alternative Site 4 is adjacent to an existing public road; however, there are no existing utility lines that could provide service. A 1.5-mile utility line route would need to be constructed to the site, crossing about 4.3 acres of NWI wetlands. NWI information indicates that Alternative Site 4 would also impact an additional 65 acres of wetlands compared to the proposed Terminal site.

We received a comment during the draft EIS public comment period suggesting that, given the large size of the parcel, it may be possible to at least partially avoid wetland impacts at the site and thereby increase the environmental advantage of the site. Upon review, the site appears to have an approximately 125-acre block of near-contiguous upland forested land with approximately 2,600 feet of the shoreline frontage. There appears to only be an approximately 2.9-acre, permanently flooded palustrine unconsolidated bottom wetland in the northwest portion of this upland block. There also appears to be a corridor of upland forested land connecting this upland block to the public road (West Tank Farm Road) that parallels the northern boundary of the full parcel. This corridor runs adjacent to and then crosses an apparent drainage ditch but otherwise extends, at a width upwards of 260 feet, approximately 1.5 mile from the contiguous upland forested block to West Tank Farm Road. Although the entire parcel is comprised of about 43 percent wetland habitat, it does appear, as the commenter notes, that there would be enough acreage within the parcel to site a terminal of an equivalent size as the proposed Terminal on the waterfront of the Calcasieu Industrial Canal, and avoid direct Terminal impacts on wetlands aside from the noted approximately 2.9-acre palustrine wetland.

As noted in table 3.3-1, dredging for a turning basin at Alternative Site 4 would require removal of approximately 390,000 fewer cubic yards than would be required at the proposed marine facility. Additionally, the dredged area for this alternative would be at the terminus of the Calcasieu Industrial Canal, which is surrounded by industrial buildings on all sides. As noted above, constructing the Project on the Alternative Site 4 parcel would require construction of a 23.2-mile feed gas pipeline. The presence of existing rights-of-way between the alternative site and the closest feasible natural gas pipeline interconnection indicate the feed gas pipeline would have the potential to be co-located with existing rights-of-way for 23 of the 23.2 miles.

However, as noted above, the additional 24 miles that LNG carriers would be required to transit to reach the Terminal would result in increased air emissions and potential impacts on aquatic resources, including marine mammals, associated with the Project. Furthermore, the substantially extended pipeline length could require additional aboveground facilities, such as a compressor station, which could result in permanent land use or vegetation resource impacts and increased air emissions. Although the pipeline would cross fewer acres of mapped NWI wetlands than the Project's Pipeline (17 acres for Alternative Site 4 versus 24 acres for the proposed Project), the route would require crossings of 26 roads (versus 1 for the Proposed Pipeline) and would pass through or be adjacent to numerous houses and neighborhoods (2 of which would be within 50 feet of the pipeline). Approximately 17 of the 23 miles of feed gas pipeline right-of-way would pass through environmental justice communities (Census Tract 17 Block Group 4 and Census Tract 20 Block Group 4), whereas the proposed Project would not cross or be constructed within any environmental justice communities.

Given the increased air impacts related to the longer vessel transits that would be required to reach the site; the associated addition to vessel traffic congestion within the Calcasieu Ship Channel that would occur due to having to transit the approximately 24 miles farther than what would be required for the proposed Project site; and the potential resource impacts related to the 20 additional miles of feed gas pipeline that would be necessary (including road crossings and the potential necessity for a compressor station); and that almost 75 percent of the pipeline route would be within environmental justice

communities, we conclude that Alternative site 4 does not provide a significant environmental advantage over the proposed Project location and was therefore not carried forward for additional consideration.

3.3.6 Alternative Site 5 – Mississippi River, Plaquemines Parish

Alternative Site 5 is a 462-acre site on the lower Mississippi River in Plaquemines Parish, Louisiana, within an industrially zoned area. It contains 5,624 feet of waterfront, and the site was commercially available at the time of this assessment. The land cover at the site is primarily forested or shrubland habitat, with a smaller portion of developed and wetland areas. Connection to the closest feed-gas supply would require approximately 20 miles of pipeline. Although the pipeline could be co-located with an existing right-of-way for over 11 miles, the route would pass almost entirely through wetlands and open water habitat classified as EFH (figure 3.3-1c). Given the location of the site, Commonwealth has determined that no additional turning basin would be needed. Any dredging would be limited to construction of the berth slip.

LNG carriers calling at the Terminal would need to transit approximately 76 river miles upstream using the Southwest Pass. This represents the greatest distance for LNG carrier transit from the Gulf of Mexico compared to the other alternative locations sited on the Calcasieu Ship Channel. The increased travel distance would likely result in a minor increase in air emissions as compared to the proposed Terminal site. According to NWI mapping, Alternative Site 5 would impact the least wetland acreage for construction of the Terminal. The natural gas feed pipeline would disturb the greatest amount of wetland acreage of all alternatives (approximately 176 acres). Although these impacts would be temporary, the longer pipeline would likely require construction of additional permanent upstream facilities (e.g., pipeline looping and compression stations) resulting in further potential environmental impacts. The pipeline would also cross an environmental justice community. Construction and operation would require clearing of about 240 acres of forested vegetation.

Alternative Site 5 would be adjacent to existing utilities and public roads. However, there are six residences along the waterfront between 150 and 750 feet from the site. There is also a community center and local park about 0.5 mile from Alternative Site 5. Overall, Alternative Site 5 would result in the fewest acres of permanently filled wetlands. However, it would require the permanent removal over almost 250 acres of trees and would likely require wetland/EFH fill for pipeline aboveground facilities. We received comments that this forest is heavily disturbed. However, utilizing this site could also have adverse effects on neighboring residents and the community center. Given its potential effects on the local community, pipeline impacts on an environmental justice community and the environmental disadvantages associated with the site's distance from natural gas supply, loss of forest habitat due to clearing at the site (even though it may be low quality forest), and the extended transit distance required for LNG carriers, Alternative 5 would not provide a significant environmental advantage to the proposed Project location and was not carried forward for additional analysis.

3.3.7 Alternative Site 6 – South of Cameron LNG

Alternative Site 6 is a 251-acre site on the west side of the Calcasieu Ship Channel, south and adjacent to the existing Cameron LNG Terminal near Hackberry, Louisiana. This site is within an environmental justice community (Census tract 9702.01 block group 1). It contains 7,328 feet of waterfront and the site was commercially available at the time of this assessment. The land cover at the site is primarily emergent herbaceous wetlands, with a smaller portion of developed and upland herbaceous lands. Given the presence of Cameron LNG facilities, Commonwealth would need to create a turning basin to accommodate the LNG carriers. Creation of the turning basin would require about 5.6 million cubic yards of dredging, plus continued maintenance dredging throughout the life of the Project. LNG carriers calling at the Terminal would need to transit an additional 18 miles upstream from the proposed site using the

Southwest Pass. The increased travel distance would likely result in a minor increase in air emissions as compared to the proposed Terminal site.

According to NWI mapping, Alternative Site 6 includes about 155 acres of wetlands. Feed-gas supply would be obtained from the same point as the proposed pipeline, resulting in the need for a 15.6-mile-long pipeline to the Terminal Site (figure 3.3-1d). The pipeline would cross mainly emergent wetlands and would include crossing the town of Hackberry, Louisiana. The extension of the natural gas feed pipeline would disturb 113.7 acres of wetlands. Although the right-of-way impacts would be temporary, the approximately five-fold increase in the pipeline length may require construction of aboveground facilities such as a compressor station, which would result in permanent impacts and increased air emissions. Additionally, the Pipeline would also traverse an environmental justice community. Likewise, the approximately three-fold increase in dredging volume would have a substantially greater impact on EFH than the proposed site, and the Calcasieu Ship Channel adjacent to this site is classified by LDWF as Public Seed Grounds for oysters (LDWF, 2022a). Additionally, this area of the Calcasieu Ship Channel does not experience the same velocity of current flow as the proposed site (COE, 2010). Therefore, post-dredge recovery of water bottom organisms would likely be slower, as the transport of recolonizing benthic fauna to the area would not occur as quickly, thereby creating longer term effects at the site (see section 4.6.2.2 regarding expected post-dredge recovery at the proposed site). We received a public comment suggesting the large difference in dredging requirements could be offset by beneficially using the dredge materials for wetland creation. Commonwealth has proposed to transport the dredge materials removed from the proposed site to wetland habitat south of Calcasieu Lake in the Cameron Prairie National Wildlife Refuge, a location listed in the Louisiana Coastal Management Plan as a marsh restoration area (see section 4.4.2). Given that the alternative site and a portion of the pipeline would be within an environmental justice community, the environmental disadvantages associated with the site's distance from natural gas supply and the substantial increase in impacts on aquatic habitat and EFH related to the creation of a turning basin, Alternative 6 would not provide a significant environmental advantage to the proposed Project location and was not carried forward for additional analysis.

3.3.8 Alternative Site 7 – North of Cameron LNG

Alternative Site 7 is a 317-acre site on the west side of the Calcasieu Ship Channel, north of the existing Cameron LNG Terminal. It contains 4,064 feet of waterfront and the site was commercially available at the time of this assessment. The land cover at the site is primarily emergent herbaceous wetlands and upland grassland/herbaceous, with a smaller portion of developed and cultivated crops. Commonwealth would need to create a turning basin to accommodate the LNG carriers. Creation of the turning basin would require about 5.6 million cubic yards of dredging, plus continued maintenance dredging throughout the life of the Project. LNG carriers calling at the Terminal would need to transit an additional 21 miles upstream from the proposed site using the Southwest Pass. The increased travel distance would likely result in a minor increase in air emissions as compared to the proposed Terminal site.

According to NWI mapping, Alternative Site 7 includes about 31.3 acres of wetlands. Feed-gas supply would require a 69.4-mile pipeline to the Terminal Site (figure 3.3-1e). The pipeline would cross mainly emergent wetlands and would also include crossing the town of Hackberry, Louisiana. The extension of the natural gas feed pipeline would disturb 142.4 acres of wetlands. As with previous alternatives, the impacts on wetlands within the right-of-way would be temporary; however, the increase in the pipeline length may require construction of aboveground facilities such as a compressor station, which would result in permanent impacts and increased air emissions. Also, about one-half of the pipeline route would pass through the Census tract 9702.01 block group 1 environmental justice community. Additionally, there is no direct utility or road service to this site; about 0.6 mile of additional utility line and right-of-way would be required for Alternative 7. As with Alternative 6, the approximately three-fold increase in dredging volume would have a substantially greater impact on EFH than the proposed site and

increasing the volume of dredging necessary by 3.9 million cubic yards (plus regular maintenance dredging). Furthermore, this area of the Calcasieu Ship Channel also does not experience the same velocity of current flow as the proposed site (COE, 2010). Therefore, post-dredge recovery of the water bottom would likely be slower, as the transport of recolonizing benthic fauna to the area would not occur as quickly, thereby creating longer term effects at the site. Given the environmental disadvantages associated with the site's distance from natural gas supply, that approximately one-half of the pipeline route would pass through an environmental justice community, the increased air emissions related to longer ship transits to reach the site and the potentially needed compressor station, and the substantially greater impacts on aquatic habitat and EFH related to creation of a turning basin, Alternative 7 would not provide a significant environmental advantage to the proposed Project location and was not carried forward for additional analysis.

3.3.9 Alternative Site 8 – South of Golden Pass LNG

Alternative Site 8 is a 421-acre site on the west side of the Sabine Pass Ship Channel, south of the existing Golden Pass LNG Terminal. It contains 2,451 feet of waterfront and the site was commercially available at the time of this assessment. The land cover at the site is almost entirely emergent herbaceous wetlands, with a minimal portion of developed land. Commonwealth would need to create a turning basin to accommodate the LNG carriers. Creation of the turning basin would require about 4.6 million cubic yards of dredging, plus continued maintenance dredging throughout the life of the Project. LNG carriers calling at the Terminal would need to transit seven miles upstream on the Sabine Pass Channel from the Channel entrance at the Gulf of Mexico, whereas the Commonwealth Terminal is less than 0.5 mile from the Gulf of Mexico. The increased travel distance would likely result in a minor increase in air emissions as compared to the proposed Terminal site.

According to NWI mapping, Alternative Site 8 includes about 402.3 acres of wetlands. Feed-gas supply would be obtained from the same point as the proposed pipeline, resulting in the need for a 69.4-mile pipeline to the Terminal Site (figure 3.3-1f). The pipeline would cross mainly emergent wetlands, pastureland, and woody wetlands. The extension of the natural gas feed pipeline would disturb 80.9 acres of wetlands. As with previous alternatives, the impacts on wetlands within the right-of-way would be temporary; however, the increase in the pipeline length may require construction of aboveground facilities such as a compressor station, which would result in permanent impacts and increased air emissions. Furthermore, the approximately two-fold increase in dredging volume would have a substantially greater impact on EFH as compared to the proposed site and increase the volume of dredging necessary by 3.9 million cubic yards (plus regular maintenance dredging). Given its environmental disadvantages associated with the site's distance from natural gas supply relative to the proposed site and the increase in impacts on aquatic habitat and EFH related to creation of a turning basin, Alternative 8 would not provide a significant environmental advantage to the proposed Project location and was not carried forward for additional analysis.

3.3.10 Conclusion

We evaluated the proposed Terminal site and eight possible alternative sites to assess whether any of the alternatives would be reasonable and have a significant environmental advantage as compared to the proposed Terminal site. The proposed Terminal site contains the largest percentage of wetland habitat relative to the size of the location and would cause impacts on chenier habitat. However, Commonwealth is working with federal and state agencies to mitigate for the Project effects on wetland and chenier habitat where such impacts would be unavoidable (see sections 4.4.2 and 4.5.3). The proposed Terminal site has the advantage of being commercially available and requiring the shortest transit from the Gulf of Mexico, thus reducing impacts from vessel traffic and neither the Terminal site nor the Pipeline route would be in an environmental justice community. The Project would require substantially less dredging than five of the alternatives, thus broadly minimizing impacts on surface water and aquatic resources. Based on the site-

specific analyses of the alternative sites' size and availability, potential for marine operations, infrastructure, and environmental and environmental justice factors, we conclude that alternatives 1-8 would not provide significant environmental advantages to the proposed Project location.

3.4 ALTERNATIVE TERMINAL CONFIGURATIONS

Facility design and configuration within the Terminal site is subject to the siting requirements of 49 CFR 193 and other industry or engineering standards. Regulatory requirements stipulate that potential thermal exclusion and vapor dispersion zones remain on site, limiting the potential locations for specific terminal components (e.g., LNG storage tanks). Similarly, thermal radiation zones for flares require that the flare be set back a minimum distance from other equipment and property lines. Commonwealth's selected locations for each of the components of the Terminal was based on the relevant regulations, codes, and guidelines.

COE requested that Commonwealth address the feasibility of confining the proposed Project to non-wetland portions of the proposed Terminal site, to the greatest extent practicable. Based on NWI wetland data, the proposed Terminal site is comprised of almost 48.6 percent wetlands. Commonwealth made minor adjustments to its proposed Terminal configuration during the pre-filing process as it acquired additional land parcels surrounding the Project site and as a result of changes to its LNG storage tank containment designs. Commonwealth was able to adjust the Terminal configuration to reduce impacts on wetland habitat from 79.1 acres to 68.5 acres (based on NWI wetlands data) and reduce impacts on chenier habitat from approximately 17.0 acres to 13.3 acres. Actual surveyed wetland impacts are slightly higher, with construction of the Terminal disturbing 95.9 acres and the permanent fill of 89.6 acres.

We received a comment from the public noting that in Commonwealth's August 2019 application to the FERC, the design of the Terminal included 6 LNG storage tanks with capacities of 40,000 m³ per tank for a total storage capacity of 240,000 m³. In Commonwealth's July 2021 application amendment,³¹ Commonwealth adjusted the proposed design of the LNG storage tanks to enable capacities of 50,000 m³ per tank for total storage capacity of 300,000 m³. Despite the increase in proposed storage capabilities, Commonwealth did not propose an increase in LNG production capacity. The commenter requested that Commonwealth alter the configuration of the Terminal to include 5 LNG storage tanks with capacities of 50,000 m³ per tank for a total storage capacity of 250,000 m³, which would be greater than the storage capacity that Commonwealth originally proposed and, with the removal of an LNG storage tank from the Terminal design, potentially reduce the Terminal footprint and have a smaller acreage impact on wetlands. Commonwealth noted in reply that the proposed increase in LNG storage capacity did not increase the proposed Terminal footprint from that which was proposed in the August 2019 application. Commonwealth also stated that the increase in proposed storage capacity is intended to improve the operational flexibility of the Terminal during inclement weather events, such as fog or high winds, that frequently require the Calcasieu Ship Channel to be closed to vessel traffic. Commonwealth determined that increased storage capacity would reduce the likelihood that the Terminal would need to shut down in circumstances where an LNG carrier would not be able to berth at the Terminal and offload LNG from the Terminal in a timely fashion. Removing one LNG storage tank would result in a maximum decrease of approximately 2.3 acres. Given this modest change in acreage, we conclude the possible benefits of the increased storage capacity, with no increase in the Terminal footprint from the original application, would be preferable to the potential adverse air impacts due to increased flaring events of Commonwealth having to shut down and restart the Terminal at a higher annual frequency than would otherwise occur.

³¹ Commonwealth's amended application to the FERC can be viewed on FERC's eLibrary (<https://elibrary.ferc.gov/eLibrary/search>) under accession no. 20210708-5004.

We have not identified any other changes to the Terminal configuration that would meet the required regulations, codes, and guidelines and at the same time further avoid or reduce environmental impacts associated with the proposed Terminal configuration.

3.5 ALTERNATIVE LIQUEFACTION DESIGNS

Commonwealth's liquefaction design is described in section 2.1.1. We received a comment from the public suggesting that Commonwealth could use fewer larger liquefaction trains that would employ a more efficient liquefaction process (Air Products and Chemicals' C3MR process vs. Commonwealth's proposed AP-SMR process by Air Products and Chemicals), as stated by the manufacturer of the liquefaction trains. The commenter stated the larger, more efficient liquefaction trains would have fewer environmental impacts during operation due to the general tenet that being less efficient increases environmental impacts. However, the facilities required for the C3MR process require a substantially larger footprint as the process includes more heat exchanging equipment and additional refrigerant compressors. Comparing a recent FERC jurisdictional C3MR facility to Commonwealth's proposed SMR, the footprint of liquefaction and pretreatment area per unit of LNG is nearly 70 percent greater for the C3MR technology than for the SMR technology. For the Commonwealth project, this would equate to about a 12-acre increase in the area required by the pretreatment and liquefaction process equipment. Public comments point out a large area between the LNG storage tanks and the liquefaction units with only a small impoundment. This impoundment basin is the largest spill containment for the facility, collecting spills from both the process area, and the ship loading area. The area around the impoundment basin is not suited for additional process equipment because it presents a safety concern. The Commonwealth layout has the impoundment located such that a fire at the impoundment would not expose process vessels to high heat fluxes which could result in cascading damage and safety impacts to the public. Therefore, if the C3MR process were pursued, Commonwealth would need to increase the footprint of the Terminal (i.e., 12 acres) into eastern black rail habitat and/or wetlands, which would offer no significant environmental advantage to the proposed Project.

3.6 ALTERNATIVE TERMINAL POWER SOURCES

3.6.1 Grid-Based Electricity vs. Natural Gas-Powered Generators

We received a comment from the public suggesting that Commonwealth should use commercial, grid-sourced electricity in place of the natural gas-fired simple cycle electric power generators Commonwealth has proposed to power the Terminal. The commentor posits that using electricity would reduce overall Project emissions based on the assumption that the commercial electric grid will increasingly source more power from renewable energy sources, whereas the Terminal would use natural gas for the duration of the expected Project life span. The commenter also requested FERC to compare the power sources of nearby LNG terminals to Commonwealth's proposed approach. Commonwealth consulted the Jefferson Davis Electric Cooperative to assess the feasibility of using grid-sourced electricity to power the Terminal. Powering the Terminal using grid-sourced electricity would require Commonwealth to construct a 29.3-mile transmission line to reach the nearest available electrical substation (Mud Lake substation on the northern side of Calcasieu Lake) given that the existing transmission lines in the Project area do not have the sufficient 500-megawatt (MW) capacity necessary to provide power to the Project. Commonwealth would also be required to fund upgrades to the existing grid and increased generating capacity at the Nelson power station, which would be the primary source for the electricity that Commonwealth would use.

Commonwealth contends the cost of funding the upgrades and constructing a transmission line of that length would be prohibitive for the Project. Additionally, Commonwealth states that relying on the transmission line and substation framework would be too unreliable, noting that severe tropical storm

systems are expected to increase in frequency and size and past hurricanes in the Project area have disrupted power supplies for extended periods.

Regarding grid-based electricity likely being increasingly powered by renewable sources, comparison between the emissions associated with the natural gas-driven turbines of the refrigeration compressors and the emissions associated with imported power from the grid can be complicated. Generally, grid power can be obtained from a variety of power sources (such as fossil fuel and renewable fuels). Further, there are likely differences in the contributing fossil fuel-fired generating stations: they may use gas, oil, or coal for fuel; they would have different plant configurations (simple cycle or combined cycle power generation); and the plants would likely have different emission control systems. However, the Nelson power station, which would be the primary source for the electricity that Commonwealth would access, is currently a coal-powered plant. Considering Commonwealth's assertions that constructing a new transmission line and funding upgrades to the Nelson power station would be cost prohibitive, combined with its design considerations for power reliability during severe storms, and the uncertainty of whether the Nelson power station would use an energy source other than coal, we conclude this alternative would not provide a significant environmental advantage to Commonwealth's proposed method of using an on-site source to power the Terminal.

3.6.2 On-site Electrical Generation vs. Gas-Powered Generators

We received comments from the public suggesting that, if Commonwealth could not source its power from the commercial grid, Commonwealth should construct electrical generation plants at the Terminal to use a combined cycle plant to power the Terminal instead of simple cycle gas-powered system. However, the required footprint of such a plant would be much larger than Commonwealth's proposed simple cycle approach. Commonwealth would require a 500 MW plant to power the liquefaction facilities and the general auxiliary load of the Terminal in general. A combined cycle power plant capable of converting natural gas to that volume of electricity would require an approximately 100-acre footprint. Public comments cite a report which states a liquefaction facility with combined cycle drives instead of simple cycle drives may reduce emissions by approximately 25 percent. However, any reduction in emissions impacts related to converting the natural gas to electricity would be offset by the physical impacts of constructing the power plant. Public comments suggest that if combined cycle is not utilized to produce all the power required by the liquefaction facilities, then a combined cycle should be considered for the 120 MW of on-site power instead of the proposed simple cycle electrical generators. A combined cycle power plant converts more energy from fuel gas to electricity than simple cycle generators. However, the refrigerant compressor gas turbine drives consume more fuel than the simple cycle electric generators. If the 120 MW of on-site simple cycle power generation was switched to combined cycle, the overall site fuel consumption, and thereby emissions, would be reduced by less than 10 percent. Additionally, a 120 MW combined cycle would have a land usage between the proposed simple cycle electrical generators and the 100-acre 500 MW combined cycle power plant. Even a 120 MW combined cycle power plant would have a significant land use compared to the simple cycle to accommodate the waste heat recovery equipment, steam turbine, air-cooled condenser, and water treatment facilities. The additional space of a combined cycle, either 120 MW or 500 MW, would require an expansion of the Terminal into eastern black rail habitat and wetlands. Therefore, we conclude that this alternative would not provide a significant environmental advantage to Commonwealth's proposal to construct the smaller simple cycle gas-powered system.

3.6.3 On-site vs. Off-site Facility Locations

We received comments from the public suggesting that Commonwealth should construct the gas-powered or electrical generators off-site in an upland area to reduce the Terminal footprint and thereby reduce impacts on wetlands. Placing the power generators off-site would result in the same vulnerabilities to storms as described above for the grid-based power. Commonwealth would need to construct a

transmission line from the power generators to the Terminal, which would be vulnerable to severe storms. Additionally, the generators would require a feed gas source in the form of a lateral pipeline from Commonwealth's proposed Pipeline. This lateral would result in additional environmental impacts, much of which would be in wetland habitat based on the proposed location of the Pipeline. Siting the power generators within the Terminal storm protection wall would alleviate most storm-related vulnerabilities and minimize the infrastructure necessary to connect the power source to the Terminal. Therefore, we conclude this alternative would not provide a significant environmental advantage to Commonwealth's proposal to place the electrical generators within the Terminal footprint.

3.7 ALTERNATIVE USES FOR METHANE

We received a comment from the public suggesting that FERC should not promote the use of LNG as a fuel but should instead promote the use of methane for fertilizer production. Doing so would be counter to Commonwealth's stated purpose and need for the Project; therefore, this alternative was not considered further.

3.8 ALTERNATIVE PIPELINE ROUTES

Commonwealth proposes to construct a 3.0-mile-long, 42-inch-diameter natural gas pipeline with interconnections at the existing 12- and 20-inch-diameter Bridgeline pipeline system and an interconnection at the 16-inch-diameter Kinetica pipeline system. Commonwealth updated the pipeline route in March 2021 in response to landowner requests. The Pipeline would deliver 1.44 Bcf/d of natural gas to the Terminal to allow Commonwealth to liquefy and export approximately 8.4 MPTA of LNG. Given the relatively short length of the proposed Pipeline, the range of alternative pipeline routes is limited to locations where the Pipeline could connect to existing natural gas pipelines within 5 miles of the Terminal.

We reviewed four major alternatives and the proposed Pipeline route to assess whether an alternate Pipeline route would significantly reduce the environmental impacts of the Pipeline (figure 3.8-1). These major route alternatives begin at the Terminal and follow different alignments to reach the Kinetica and Bridgeline pipelines at different points along the pipelines relative to the proposed Pipeline alignment. The analysis was based on comparable information (i.e., NWI data for wetlands (FWS, 2018); National Land Cover Database data for land use (National Land Cover Database [NLCD, 2016]; and NHD for waterbodies (USGS, 2019a)); therefore, impacts for the proposed route may differ from analyses in other sections of this EIS that incorporate survey data. The results of this evaluation for Major Route Alternatives 1 through 4 are summarized in table 3.8-1 and are discussed in the following sections. Commonwealth would construct the Pipeline pursuant to section 3 of the NGA, which does not grant the applicant eminent domain. Therefore, there is limited ability to ensure that a recommended alternative site would be available unless the landowner would make it available for purchase or lease.

3.8.1 Proposed Pipeline Route – Commonwealth, Cameron Parish, Louisiana

The proposed Pipeline route would be 3.0 miles long, with the permanent right-of-way crossing 3.0 miles of NWI wetlands and one road (table 3.8-1). Commonwealth would use the HDD crossing method to avoid direct impacts on the road and minimize impacts on a drainage ditch adjacent to the roadway. The pipeline route would not permanently affect any wetlands. Aboveground facilities associated with the Pipeline would permanently impact 0.3 acre of wetlands.

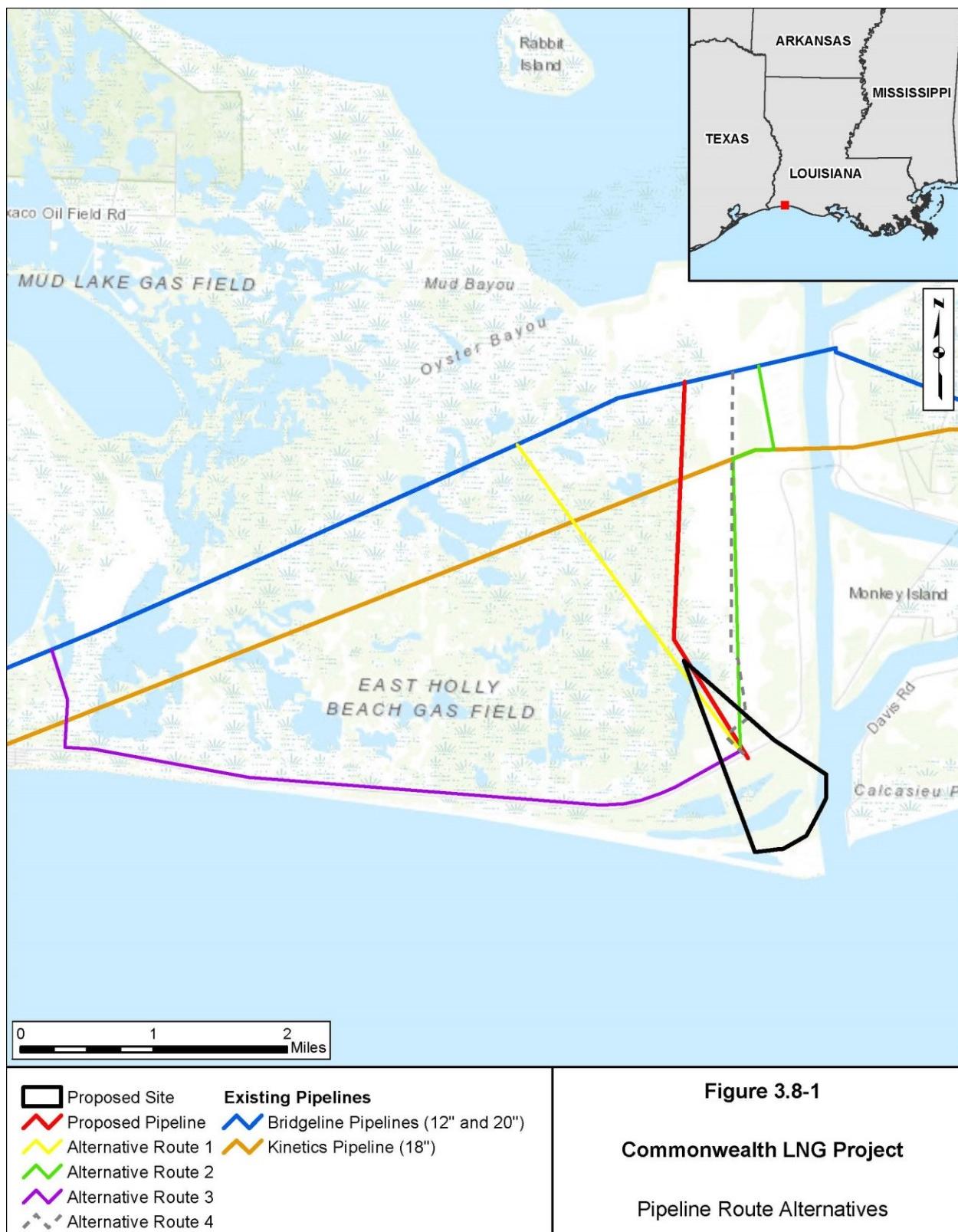


TABLE 3.8-1

Comparison of the Pipeline Route Alternatives

| Criteria | Units ^{a/} | Proposed Route | Route Alternative 1 | Route Alternative 2 | Route Alternative 3 | Route Alternative 4 |
|---|---------------------|----------------|---------------------|---------------------|---------------------|---------------------|
| Route Length | Miles | 3.0 | 2.9 | 3.2 | 5.9 | 3.1 |
| Parallel/Adjacent to Existing Right-of-Way | Miles | 0.0 | 0.0 | 0.3 | 5.1 | 2.6 |
| Land Use (NLCD): | | | | | | |
| Barren Land | Miles | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Developed | Miles | 0.06 | 0.0 | 0.0 | 0.1 | 0.0 |
| Emergent Herbaceous Wetlands (temporary impacts) | Miles | 2.7 | 2.6 | 2.8 | 5.7 | 3.0 |
| Emergent Herbaceous Wetlands (permanent impacts) | Acres | 0.3 | 0.3 | 0.2 | 0.3 | 0.3 |
| Herbaceous | Miles | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| Open Water | Miles | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 |
| Wetlands (NWI) | Miles | 3.0 | 2.9 | 2.9 | 5.9 | 3.1 |
| National Hydrography Dataset Features | | | | | | |
| Lake/Pond | Miles | 0.0 | 0.3 | 0.0 | 0.2 | 0.0 |
| Swamp/Marsh | Miles | 1.9 | 2.2 | 0.2 | 4.6 | 0.3 |
| Roads Crossed (Highway 27/82) | Number | 1 | 1 | 1 | 1 | 1 |
| Property Holders | Number | 53 | 54 | 53 | 70 | 53 |
| a/ Length and area based on Geographic Information System (GIS) analysis and rounded; total may not equal sum of addends. | | | | | | |

3.8.2 Route Alternative 1

Route Alternative 1 is 0.1 mile shorter than the proposed route and crosses 0.1 mile fewer emergent herbaceous wetlands. However, this route would cross 0.2 mile of habitat identified as land/pond in the NHD, whereas the proposed route would not cross any habitat identified in the NHD as lake/pond and would result in the same acreage of permanent emergent herbaceous wetland impacts. Route Alternative 1 would affect one more landowner than the proposed route. In total, Route Alternative 1 would not provide a significant environmental advantage or minimize impacts on landowners compared to the proposed route; therefore, we did not evaluate this route alternative any further.

3.8.3 Route Alternative 2

Route Alternative 2 is 0.2 mile longer than the proposed route, would cross 0.1 mile more emergent herbaceous wetlands, but cross 0.2 mile fewer open water, would be co-located with an existing right-of-

way for 0.3 mile, and would result in 0.1 acre less of permanent emergent herbaceous wetland impacts. All other criteria are similar between the Proposed Route and Route Alternative 2. Route Alternative 2 offers a slight reduction in wetland impacts and makes some use of an existing right-of-way; however, a segment of this route between the Kinetica and Bridgeline pipelines is not available for Commonwealth to obtain an easement through. Therefore, under section 3 of the Natural Gas Act, this alternative is not feasible, and we did not evaluate this route alternative any further.

3.8.4 Route Alternative 3

Route Alternative 3 would be co-located with an existing right-of-way (Highway 27/82) for approximately 5.1 miles. However, it would be almost 3.0 miles longer than the proposed route, would cross 2.7 more miles of emergent herbaceous wetlands habitat, and would result in the same acreage of permanent emergent herbaceous wetland impacts. Route Alternative 3 would not provide a significant environmental advantage relative to the proposed route; therefore, we did not evaluate this route alternative any further.

3.8.5 Route Alternative 4

Route Alternative 4 was recommended to Commonwealth by LDWF during a Project status meeting in October 2019 as a way to increase collocation of the Pipeline with an existing right-of-way. We also received a comment during the public comment period for the draft EIS asking us to consider more strongly the LDWF-recommended route. The route is 0.1 mile longer than the proposed route. The route would cross 3.04 miles of emergent herbaceous wetlands, 0.03 mile more than the proposed route, and would result in the same acreage of permanent emergent herbaceous wetland impacts. Otherwise, the route would cross the same land use types, roads, and property holders as the proposed route. Route Alternative 4 would increase co-location along an existing right-of-way by 2.6 miles, primarily through emergent herbaceous wetlands. Although co-location would be increased, emergent herbaceous wetlands are generally not strongly affected by habitat fragmentation and Commonwealth would restore the Pipeline right-of-way and the emergent vegetation present would be expected to return to pre-construction conditions within a short-term period. Most significant to our assessment, the proposed route takes into account requests relayed to Commonwealth from affected landowners during landowner approval negotiations to route the Pipeline along a different alignment across their properties. Given that Commonwealth would construct the Pipeline pursuant to section 3 of the NGA, which does not grant the applicant eminent domain , and the short-term impacts anticipated on wetlands that would be impacted by the proposed route, we conclude Route Alternative 4 would not provide a significant environmental advantage relative to the proposed route. We did not evaluate this route alternative further.

3.8.6 Conclusion

None of the four route alternatives assessed herein would provide a significant environmental advantage and/or reduction in impacts on the properties of landowners relative to the proposed Pipeline route. Aside from the LDWF recommendation, we did not receive any comments during scoping regarding alternatives to the Pipeline route. Therefore, we conclude that Commonwealth's proposed Pipeline route would be the preferred route for the Project.

3.9 ALTERNATIVE ABOVEGROUND FACILITY SITES

We received comments from the public inquiring about the alternatives analysis of aboveground facilities for the Pipeline. Proposed aboveground facilities for the Pipeline would include the two interconnection facilities at the Kinetica and Bridgeline pipelines, one pig launcher, and one meter station. The interconnection facilities would be within the Pipeline permanent right-of-way and the pig launcher and meter station would be contiguous with the Pipeline permanent right-of-way. The interconnections,

pig launcher, and meter station would permanently impact approximately 0.3 acre of emergent wetlands on properties with willing landowners. Wetlands are by far the dominant land cover within the general region of the Project and the locations of the aboveground facilities are tied to the locations of the required interconnection facilities; therefore, we did not identify or evaluate alternative sites for the aboveground facilities (i.e., all of the alternative pipeline routes would result in comparable wetland impacts). Additionally, no specific aboveground facility site alternatives were suggested during the public scoping period or as part of the comments received during draft EIS comment period. Given that we have not identified any other sites for the aboveground facilities that would provide a significant environmental advantage, we conclude that the sites proposed by Commonwealth would be the preferred alternative.

(Ausenco, 2018), traffic in the channel is projected to double to 2,183 vessel calls in 2023. Approximately 800 of these new vessel calls are projected to involve LNG carriers.

Barge deliveries would occur throughout the Project's 36- to 38-month construction period, with a higher number of deliveries expected to occur during certain phases of construction. Commonwealth estimates that an average of seven barges per week would be expected during peak construction. Since the Terminal site is near the mouth of the ship channel, we do not anticipate that barge deliveries would result in any significant impacts on marine traffic in the ship channel.

During operations, up to 156 LNG carriers would call at the Terminal per year. In a letter dated March 7, 2019, the USCG issued the LOR for the Project, which stated that the Calcasieu Ship Channel is considered suitable for LNG marine traffic in accordance with the guidance in the USCG's Navigation and Vessel Inspection Circular 01-11. The USCG also indicated that if an increase in port calls is expected, it recommended that appropriate studies showing additional traffic impact on the waterways be conducted.

The proposed increase in vessels over the estimated 2023 number of approximately 2,183 vessels annually and projected future increase in vessels would not likely affect the capability of the channel to handle the proposed ship movements (Ausenco, 2018). The Terminal would be at the entrance of the ship channel, resulting in short inbound and outbound transits. Given the location of the facility, it is possible that LNG carriers may be able to proceed directly to the Terminal without forming a convoy, as is required for other LNG carriers bound for other facilities.

During operations, security zones for LNG carriers in transit would impact recreational and commercial fishing vessels within the Calcasieu Ship Channel because they would be required to exit the security zone while the LNG carrier passes. The need and size of a security zone would be established by the USCG. After the moving security zone passes, recreational boaters and fishermen could return and continue their prior activities. However, these delays would be temporary, security zone closures would be expected to last no more than one hour and are not expected to significantly impact recreational or commercial fishermen.

4.9.12 Environmental Justice

According to the EPA, “environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.” Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies (EPA, 2021). Meaningful involvement means:

1. people have an opportunity to participate in decisions about activities that may affect their environment and/or health;
2. the public’s contributions can influence the regulatory agency’s decision;
3. community concerns will be considered in the decision-making process; and
4. decision makers will seek out and facilitate the involvement of those potentially affected (EPA, 2021).

In conducting NEPA reviews of proposed natural gas projects, the Commission follows the instruction of Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which directs federal agencies to identify and address “disproportionately high and adverse human health or environmental effects” of their actions on minority and low-income populations (i.e., environmental justice communities). Executive Order 14008, Tackling

the Climate Crisis at Home and Abroad, also directs agencies to develop “programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts.” The term “environmental justice community” includes disadvantaged communities that have been historically marginalized and overburdened by pollution.⁶⁵ Environmental justice communities include, but may not be limited to minority populations, low-income populations, or indigenous peoples.⁶⁶

Commission staff used the Federal Interagency Working Group on Environmental Justice & NEPA Committee’s publication, *Promising Practices for EJ Methodologies in NEPA Reviews (Promising Practices)* (EPA, 2016), which provides methodologies for conducting environmental justice analyses throughout the NEPA process for this project. Commission staff’s use of these methodologies is described throughout this section.

Commission staff used EJScreen, EPA’s environmental justice mapping and screening tool, as an initial step to gather information regarding minority and/or low-income populations; potential environmental quality issues; environmental and demographic indicators; and other important factors. EPA recommends that screening tools, such as EJScreen, be used for a “screening-level” look and a useful first step in understanding or highlighting locations that may be candidates for further review.

4.9.12.1 Meaningful Engagement and Public Involvement

The Council on Environmental Quality’s (CEQ) Environmental Justice Guidance Under the National Environmental Policy Act (CEQ Environmental Justice Guidance) (CEQ, 1997) and Promising Practices recommend that federal agencies provide opportunities for effective community participation in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving the accessibility of public meetings, crucial documents, and notices.⁶⁷ They also recommend using adaptive approaches to overcome linguistic, institutional, cultural, economic, historical, or other potential barriers to effective participation in the decision-making processes of federal agencies. In addition, Section 8 of Executive Order 13985, Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, strongly encourages independent agencies to “consult with members of communities that have been historically underrepresented in the Federal Government and underserved by, or subject to discrimination in, federal policies and programs.”

As discussed in section 1.2 of this EIS, there have been opportunities for public involvement during the Commission’s environmental review process. On July 28, 2017, Commonwealth filed a request with FERC to use our pre-filing review process. We approved Commonwealth’s request on August 15, 2017 and established pre-filing docket number PF17-8-000 for the Terminal and Pipeline. Information and documents filed by Commonwealth for the Project, as well as related documents, were placed into the public record.⁶⁸ Commonwealth held an initial open house meeting on October 23, 2017, in Johnson Bayou, Louisiana, to introduce the Project to the local community. On February 22, 2018, the Commission issued a *Notice of Intent to Prepare an Environmental Impact Statement for the Planned Commonwealth LNG*

65 Exec. Order No. 14,008, 86 Fed. Reg. 7619, 7629 (Feb. 1, 2021).Id. § 219, 86 Fed. Reg. 7619, 7629

66 See EPA, EJ 2020 Glossary (Sep. 7, 2021), <https://www.epa.gov/environmentaljustice/ej-2020-glossary>.

67 CEQ, *Environmental Justice: Guidance Under the National Environmental Policy Act*, 4 (Dec. 1997) (CEQ’s *Environmental Justice Guidance*), https://www.energy.gov/sites/default/files/nepapub/nepa_documents/RedDont/G-CEQ-EJGuidance.pdf.

68 The pre-filing review process provides opportunities for interested stakeholders to become involved early in project planning, facilitates interagency cooperation, and assists in the identification and early resolution of issues, prior to a formal application being filed with the FERC.

Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Sessions (NOI).⁶⁹ In addition, we conducted a public scoping session in Johnson Bayou, Louisiana, on March 13 2018. Commonwealth held a second open house meeting on July 30, 2018, in Cameron Parish, Louisiana. Each meeting was held close to the Project area and Project information, maps, and schedules were available to the public for review.⁷⁰

Commonwealth filed its formal application for the Project on August 20, 2019. On September 3, 2019, FERC issued a Notice of Availability. On June 8, 2021, Commonwealth filed an Amendment to its Application to modify the proposed LNG storage tank designs and capacities and on July 13, 2021, the Commission issued a *Notice of Application for Amendment and Establishing Intervention Deadline*, which established an additional 15-day comment period and intervention deadline. On September 24, 2021, the Commission issued a *Notice of Intent to Prepare an Environmental Impact Statement, Request for Comments on Environmental Issues, and Revised Schedule for Environmental Review for the Project*, which established an additional 30-day scoping period.

All documents that form the administrative record for these proceedings are available to the public electronically through the internet on the FERC's website (www.ferc.gov). Anyone may comment to FERC about the Project, either in writing or electronically. All substantive environmental comments received prior to issuance of this EIS have been addressed within this document.

In addition, in 2021, the Commission established the Office of Public Participation (OPP) to support meaningful public engagement and participation in Commission proceedings. OPP provides members of the public, including environmental justice communities, with assistance in FERC proceedings—including navigating Commission processes and activities relating to the Project. For assistance with interventions, comments, requests for rehearing, or other filings, and for information about any applicable deadlines for such filings, members of the public are encouraged to contact OPP directly at 202-502-6592 or OPP@ferc.gov for further information.

We recognize that not everyone has internet access or is able to file electronic comments. Each notice was physically mailed to all parties on the environmental mailing list. Further, FERC staff has consistently emphasized in meetings with the public that all comments, whether spoken or delivered in person at meetings, mailed in, or submitted electronically, receive equal weight by FERC staff for consideration in the EIS. In addition, Commonwealth sent copies of its FERC application in hard copy and/or digital format to the Cameron Parish Library in the Project area.

Commonwealth has stated it began having its land agents reach out to affected landowners prior to the start of any surveys.⁷² Commonwealth has continued to communicate with affected landowners and has continued to receive landowner feedback regarding siting of the Project.

In its joint comments on the Project, the Sierra Club *et al.*⁷³ stated that the Commission must adequately consider the environmental justice impacts of the Project. Particularly, Sierra Club *et al.* stated

69 The NOI was sent to about 300 interested parties, including affected landowners; elected officials; tribal governments; local, state, and federal regulatory agencies; libraries; local emergency responders; and local newspapers in the Project area.

70 Commonwealth has stated it began having its land agents reach out to affected landowners prior to the start of any surveys. Commonwealth has continued to communicate with affected landowners and has continued to take landowner feedback regarding siting of the Project.

72 See page 1-59 of Resource Report 1 of Commonwealth's application to the FERC (accession no. 20190820-5125).

73 Commenters in this letter include Sierra Club, Healthy Gulf, National Audubon Society, PACAN, Turtle Island Restoration Network, Scenic Galveston Inc., and the Louisiana Environmental Action Network. (continued)

that given that there are at least eight existing, proposed, or planned LNG Terminals in Calcasieu and Cameron Parishes, air quality impacts must be evaluated for all environmental justice communities that would be impacted by air emissions from the Project and not limited to a 10-mile radius. Sierra Club *et al.* stated that noise and air impact assessments must consider the cumulative contribution of all of these projects within surrounding communities. Discussions of these impacts are provided below in section 4.9.12.3. Cumulative impacts on environmental justice communities associated with other terminal projects are discussed in section 4.13.2.7. We also received several comments regarding the Project's impact on wetland loss and climate change and the effect this would have on the population in the town of Cameron. Discussions of population impacts are provided below in section 4.9.12.3.

4.9.12.2 Identification of Environmental Justice Communities

According to the *CEQ Environmental Justice Guidance and Promising Practices*, minorities are those groups that include American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. Following the recommendations set forth in *Promising Practices*, FERC uses the **50 percent** and the **meaningfully greater analysis** methods to identify minority populations. Using this methodology, minority populations are defined in this EIS where either: (a) the aggregate minority population of the block groups in the affected area exceeds 50 percent; or (b) the aggregate minority population in the block group affected is 10 percent higher than the aggregate minority population percentage in the parish. The guidance also directs low-income populations to be identified based on the annual statistical poverty thresholds from the U.S. Census Bureau. Using *Promising Practices'* **low-income threshold criteria** method, low-income populations are identified as census block groups where the percent low-income population in the identified block group is equal to or greater than that of the parish. Here, Commission staff selected Calcasieu Parish, Cameron Parish, and Jefferson Davis Parish in Louisiana and Jefferson and Orange Counties Texas, as the comparable reference communities to ensure that affected environmental justice communities are properly identified. A reference community may vary according to the characteristics of the particular project and the surrounding communities.

According to the current U.S. Census Bureau information,⁷⁴ minority and low-income populations exist within the Project area, as discussed further below. Appendix F identifies the minority populations by race and ethnicity and low-income populations within Louisiana, for the parishes affected, and census block groups within 54 kilometers of the LNG Terminal,⁷⁵ 1 mile of the Park and Ride locations,⁷⁶ and crossed by the Pipeline segments. We have determined that a 54-kilometer radius around the proposed aboveground facilities and 1 mile around the Park and Rides are the appropriate distances for assessing impacts on the environmental justice communities. As stated, 54-kilometers represents the furthest extent of potential impacts on environmental justice communities (air quality) and 1-mile radius around the Park and Ride locations is sufficiently broad considering the likely air quality and traffic impacts associated with these locations. To ensure we are using the most recent available data, we use U.S. Census American Community Survey File# B03002 for the race and ethnicity data and Survey File# B17017 for poverty data

Subsequent joint comments on the Project's potential impacts on environmental justice communities addressed below and in appendix M include the following signatories: Sierra Club, Audubon Society, Center for Biological Diversity, Louisiana Bucket Brigade, Micah 6:8 Mission, RESTORE, and Turtle Island Restoration Network.

⁷⁴ Although the U.S. Census Bureau American Community Survey block group data for 2020 was scheduled for release on March 17, 2022, not all block groups associated with this proposal have been updated. U.S. Census Bureau, 2020 Data Release Schedule, Mar. 17, 2022, https://www.census.gov/programs-surveys/acs/news/data-releases/2020/release-schedule.html#par_textimage_0. As a result, the most current American Community Survey for identification of environmental justice communities is 2019.

⁷⁵ Census block groups are statistical divisions of census tracts that generally contain between 600 and 3,000 people (U.S. Census Bureau, 2019).

⁷⁶ See section 2.1.1.5

at the census block group level.⁷⁷ Figure 4.9-1 provides a geographic representation of potential environmental justice communities relative to the location of the Project (see also appendix G).

All Project facilities, including the Terminal and the Pipeline, would be within Census Tract 9702.01, Block Group 2, which is not an environmental justice community. An additional 148 block groups are within the 54-kilometer radius of the LNG Terminal site (see appendix F). There are 91 block groups within this radius that are identified as environmental justice communities as defined in section 4.9.12 (figure 4.9-1 and appendixes F and G). Twenty-four of the block groups are identified as environmental justice populations based on poverty levels, 18 based on the minority threshold, and 49 based on both the poverty and minority thresholds. Additionally, one of the census block groups within 1-mile of the Park and Ride locations was identified as an environmental justice community based on poverty levels (Census Tract 33, Block Group 2). Appendix F provides detail of race and ethnicity and poverty status for all block groups within the geographic scope. Appendix G contains figures illustrating the locations of all block groups identified as environmental justice communities within the geographic scope. Potential impacts on these communities from the Project are further discussed below.

4.9.12.3 Environmental Justice Impacts Analysis

As previously described, Promising Practices provides methodologies for conducting environmental justice analyses. Issues considered in the evaluation of environmental justice include human health or environmental hazards; the natural physical environment; and associated social, economic, and cultural factors. Consistent with Promising Practices and Executive Order 12898, we reviewed the Project to determine if its resulting impacts would be disproportionately high and adverse on minority and low-income populations and also whether impacts would be significant.⁷⁸ Promising Practices provides that agencies can consider any of a number of conditions for determining whether an action will cause a disproportionately high and adverse impact.⁷⁹ EPA states in their comment that the presence of any of these factors “could indicate a potential disproportionately high and adverse impact.”⁸⁰ For this Project, a disproportionately high and adverse effect on an environmental justice community means the adverse effect is predominantly borne by such population. Relevant considerations for this determination include the location of Project facilities and the Project’s human health and environmental impacts on identified environmental justice communities, including direct, indirect and cumulative impacts. The EPA recommended that the EIS include impacts on environmental justice communities from the Project. The analysis of impacts is included in this section.

No project related activities would take place in an environmental justice community. All project activities would take place within Calcasieu Parish Census Tract 9702.01, Block Group 2 (Terminal, meter station, and Pipeline) and Cameron Parish Census Tract 33, Block Group 3 and Census Tract 32, Block Group 1 (Park and Rides), which are not environmental justice communities. The closest environmental justice community is Census Tract 9702.01, Block Group 3 (approximately 0.1 mile from the LNG

77 U.S. Census Bureau, American Community Survey 2019 ACS 5-Year Estimates Detailed Tables, File# B17017, Poverty Status in the Past 12 Months by Household Type by Age of Householder, <https://data.census.gov/cedsci/table?q=B17017>; File #B03002 Hispanic or Latino Origin By Race, <https://data.census.gov/cedsci/table?q=b03002>.

78 See *Promising Practices* at 33 (stating that “an agency may determine that impacts are disproportionately high and adverse, but not significant within the meaning of NEPA” and in other circumstances “an agency may determine that an impact is both disproportionately high and adverse and significant within the meaning of NEPA”).

79 See *Promising Practices* at 45-46 (explaining that there are various approaches to determining whether an impact will cause a disproportionately high and adverse impact). We recognize that CEQ and EPA are in the process of updating their guidance regarding environmental justice and we will review and incorporate that anticipated guidance in our future analysis, as appropriate.

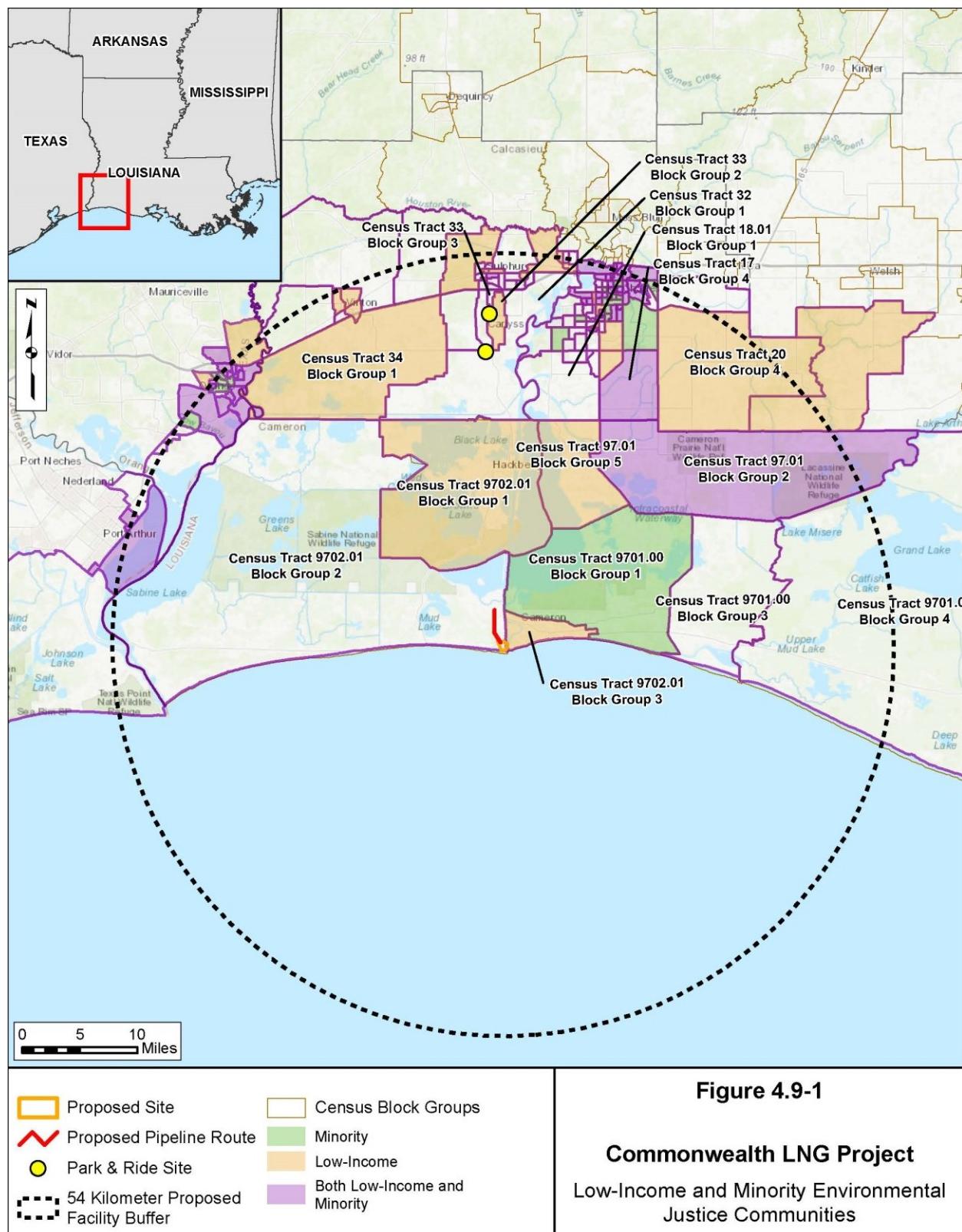
80 See EPA’s comments filed on eLibrary under accession no. 20220523-5141.

Terminal), Census Tract 9701, Block Group 1 (approximately 2.7 miles from the Pipeline) and Census Tract 33 Block Group 2 (approximately 0.2 mile from the northern Park and Ride lot).

Based on the scope of the Project and our analysis of the Project's impacts on the environment as described throughout this EIS, we have determined Project-related impacts on wetlands, surface water, visual resources, tourism, socioeconomics, traffic, noise, and air quality may adversely affect the identified environmental justice communities. Impacts on environmental justice communities associated with safety are addressed in section 4.12, Reliability and Safety.⁸⁴

In general, the magnitude and intensity of the aforementioned impacts would be greater for individuals and residences closest to the Project's facilities and would diminish with distance. These impacts are addressed in greater detail in the associated sections of this EIS. Environmental justice concerns are not present for other resource areas, such as geology, groundwater, wildlife, land use, or cultural resources due to the minimal overall impact the Project would have on these resources and the absence of any suggested connection between such resources and environmental justice communities.

84 See supra page 4-286.



justice communities would be less than significant. Project transportation needs and impacts are more fully addressed in section 4.9.11.

Barge deliveries would occur throughout the Project's 36- to 38-month construction period, with a higher number of deliveries expected to occur during certain phases of construction. Commonwealth estimates that an average of seven barges per week would be expected during peak construction. Because the Terminal site is near the mouth of the ship channel, we do not anticipate that barge deliveries would result in any significant impacts on marine traffic in the ship channel. Recreational boaters and fishers, which likely include individuals from environmental justice communities, would not experience any significant changes in marine traffic. During operations, up to 156 LNG carriers would call (or stop) at the Terminal per year. The proposed increase in vessels would not likely affect the capability of the channel to handle the proposed ship movements (Ausenco, 2018). The Terminal would be at the entrance of the ship channel, resulting in short inbound and outbound transits. Given the location of the facility, it is possible that LNG carriers may be able to proceed directly to the Terminal without forming a convoy, as is required for other LNG carriers bound for other facilities. Marine transportation is discussed further in section 4.9.11.2.

Noise

Noise levels above ambient conditions, attributable to construction activities, would vary over time and would depend upon the nature of the construction activity, the number and type of equipment operating, and the distance between sources and receptors. The closest noise sensitive area (NSA) located within an environmental justice community (Census Tract 9702.01 Block Group 3) is located about 3,300 feet east of the proposed Terminal site and is a set of temporary houses on the southern tip of Monkey Island that is used to house Calcasieu Ship Channel pilots. The human ear's threshold of perception for noise change is considered to be 3 decibels on the A-weighted scale (dBA). Peak construction noise related to Project activities would increase noise levels over ambient by 7 decibels at this NSA and would be temporary. Commonwealth expects peak construction noise to occur during construction months 10 through 12. During this time, Commonwealth expects civil works, facilities equipment assembly, pile driving, and dredging to occur simultaneously throughout the Terminal site. All increases over ambient due to construction would be temporary and only occur during daytime hours. Operational noise associated with the Terminal site would be persistent; however, Commonwealth would be required to meet sound level requirements. Operational noise would increase noise levels over ambient by about 3 decibels at the closest NSA. With the implementation of proposed mitigation measures, the Project would not result in significant noise impacts on local residents and the surrounding communities, including environmental justice populations. Noise impacts are more fully addressed in section 4.11.2.

Air Quality

As discussed in section 4.11.1, construction and operation of the Terminal site would result in long-term impacts on air quality. Construction air emissions from the Project, when considered with current background concentrations, would be below the NAAQS, which are designated to protect public health. Emissions during Terminal and Pipeline construction would generally be associated with onshore construction activities conducted using on-road and off-road mobile equipment and offshore construction activities conducted using marine vessels such as tugboats or barges and a dredging vessel. Construction emissions in the form of particulate matter (e.g., dust) would occur, and construction emissions from equipment exhaust would result in short-term, localized impacts in the immediate vicinity of construction work areas. Efforts to mitigate exhaust emissions during construction would include using construction equipment and vehicles that comply with EPA mobile and non-road emission regulations, and usage of commercial gasoline and diesel fuel products that meet specifications of applicable federal and state air pollution control regulations. Fugitive dust would be mitigated by applying water to the roadways and reducing vehicle speed. We conclude the construction-related impact on local air quality during construction of the Terminal and Pipeline would not be significant.

Commonwealth conducted air dispersion modeling to assess air quality impacts and show compliance with applicable NAAQS and Class II Prevention of Significant Deterioration (PSD) Increments for the pollutants subject to PSD review. Additionally, FERC modeled the impacts of mobile sources (LNG carriers and tugs) in addition to the PSD and NAAQS modeling required by the state. The cumulative modeling indicated that operation of the Project (including LNG Terminal stationary sources and mobile sources) would contribute to a potential nitrogen dioxide (NO₂) 1-hour NAAQS exceedance, however the Project's contribution (including LNG stationary and mobile sources) would be less than the significant impact level at each exceedance location. A majority of these potential exceedances within the modeled area would be within an environmental justice community (Census Tract 9702.01, Block Group 1) (see appendix F). Commonwealth's contribution to all exceedances is estimated to be less than the significant impact level at all exceedance locations. Therefore, we conclude that the Project would not cause or significantly contribute to a potential exceedance of the NAAQS and would not result in significant impacts on air quality in the region. Although the Project would be in compliance with the NAAQS and the NAAQS are designated to protect sensitive populations, we acknowledge that NAAQS attainment alone may not assure there is no localized harm to such populations due to project emissions of volatile organic compounds (VOC), hazardous air pollutants (HAP), as well as issues such as the presence of non-Project related pollution sources, local health risk factors, disease prevalence, and access (or lack thereof) to adequate care. Air Quality impacts are more fully addressed in section 4.11.1.

4.9.12.4 Environmental Justice Mitigation Measures

As described in *Promising Practices*, when an agency identifies potential adverse impacts, it may wish to evaluate practicable mitigating measures. Commonwealth has committed to several minimization and mitigation measures to reduce impacts related to wetlands, surface water, aquatic resources, visual resources, recreation, socioeconomics, traffic, noise, and air quality. Commonwealth has committed to:

- implementing its compensatory wetland mitigation plan that requires replanting temporarily disturbed wetlands and purchasing wetland bank mitigation credits;
- minimizing the amount of dredging needed within the Calcasieu Ship Channel;
- following Commonwealth's Facility Lighting Plan;
- using bus lots in Carlyss, Louisiana to limit the number of vehicles traveling to the site and establishment of temporary travel lanes and the use of flaggers and signs, as necessary, to ensure the safety of local traffic;
- using construction equipment and vehicles that comply with EPA mobile and non-road emission regulations, and usage of commercial gasoline and diesel fuel products that meet specifications of applicable federal and state air pollution control regulations;
- mitigating fugitive dust applying water to the roadways and reducing vehicle speed;
- implementing soft starts, bubble curtains, and vibratory hammers; and
- requiring the operational noise associated with the Terminal site to meet sound level requirements.

4.9.12.5 Disproportionately High and Adverse Impact Determination

As described throughout this EIS, the proposed Project would have a range of impacts on the environment and on individuals living in the vicinity of the Project facilities, including environmental justice populations. The closest environmental justice block groups are Census Tract 9702.01, Block Group 3 approximately 0.1 mile from the LNG Terminal (with the closest residence [pilot's temporary housing] approximately 3,300 feet away) and Census Tract 9701, Block Group 1 approximately 2.7 miles from the Pipeline. The closest town within an environmental justice community is Cameron (within Census Tract 9702.01, Block Group 3) over 2 miles away. Visual impacts on environmental justice communities near

the Terminal would be significant. As outlined in section 4.9.12.4, Commonwealth has committed to implementing a Facility Lighting Plan, which would reduce visual impacts on the environmental justice communities. Environmental justice communities in the area could also experience cumulative impacts due to the addition of other projects within the geographic scope (see section 4.13). Due to the presence of significant visual impacts on an environmental justice community and overall cumulative impacts in the project area, we conclude that impacts on environmental justice communities would be disproportionately high and adverse.

4.10 CULTURAL RESOURCES

Section 106 of the NHPA, as amended, requires that the FERC take into account the effects of its undertakings on historic properties, and to afford the Advisory Council on Historic Preservation an opportunity to comment. Commonwealth, as a non-federal party, is assisting the FERC in meeting our obligations under Section 106 by preparing the necessary information, analyses, and recommendations, as authorized by 36 CFR 800.2(a)(3).

4.10.1 Survey Results

Cultural resources surveys for the Terminal were conducted in two field studies. The resulting reports, an initial report for 2018 surveys (Jordan-Greene et. al., 2019), and an addendum report for 2019 surveys (TRC, 2019), were provided to the FERC and the Louisiana State Historic Preservation Office (SHPO). The 2018 survey covered about 246 acres at the Terminal. About 80 percent of the proposed Terminal footprint is inundated marsh, with a few natural levees, alluvial dune remnants, and/or cheniers. The entire Terminal, except for areas that were inaccessible, was visually inspected for cultural materials by Commonwealth. Special attention was given to potential high-probability areas adjacent to roadways and along sand dunes. A total of 51 shovel tests were excavated during the survey, all of which were negative for cultural materials.

The 2018 survey identified two abandoned shipwrecks of commercial fishing vessels, which are approximately 2,743 feet from the Gulf of Mexico shoreline. The shipwrecks were likely deposited during Hurricane Rita storm surges, and neither qualifies as a cultural resource. Additionally, the ruins of a circa-1960 residence (structure 12-00209) were identified during the survey. Commonwealth recommended structure 12-00209 as not eligible for the NRHP. In a letter dated April 3, 2019, the SHPO concurred with this recommendation, and indicated that no properties listed in or eligible for listing in the NRHP would be affected by the Project. We concur with the SHPO.

The 2019 survey covered 128.8 acres, of which 115.8 acres were part of the Terminal, and 13 acres comprised of three access roads. A total of 77 shovel tests were excavated, all of which were negative for cultural resources. Previously recorded site 16CM149 was reported within the boundary of the Terminal; however, the existing site form noted that the site was destroyed, and the current survey did not identify any evidence of the site. In a letter dated October 25, 2019, the SHPO indicated that no properties listed in or eligible for listing in the NRHP would be affected by the Project. We concur with the SHPO.

Commonwealth contacted the SHPO regarding the Pipeline, providing a description of this Project component, an assessment of cultural resource probability, and mapping, and requested the SHPO's concurrence that no survey was necessary. On September 28, 2019, the SHPO indicated that no known historic properties would be affected by the Pipeline. Commonwealth contacted the SHPO regarding the revised Pipeline route, providing a description of this Project component, an assessment of cultural resource probability, and mapping, and requested the SHPO's concurrence that no survey was necessary. On June 11, 2021, the SHPO indicated that no known historic properties would be affected by the revised Pipeline. We concur with the SHPO.

letter dated April 3, 2019. We also requested revisions to the plan. Commonwealth provided a revised plan addressing the SHPO's and our comments. We have reviewed the revised plan and found it acceptable.

4.10.4 Cultural Resources Conclusions

Cultural resources surveys are complete for the Project and the SHPO and FERC concur that no historic properties would be affected. Therefore, compliance with Section 106 of the NHPA is complete.

4.11 AIR QUALITY AND NOISE

4.11.1 Air Quality

We received comments from the public expressing concern about the Project's impact on public health. Air quality would be affected by construction and operation of the Project. Though air pollutant emissions would be generated by Project construction, most air emissions associated with the Project would result from the long-term operation of the Terminal site. This section of the EIS addresses the construction-and operation-based emissions from the Project, as well as projected impacts on air quality and applicable regulatory requirements.

4.11.1.1 Regional Climate

The Project is proposed in Cameron Parish, Louisiana, where the climate is humid and subtropical with long, hot summers and short, mild winters. Southern Louisiana is mostly low and level with elevations generally less than 60 feet above mean Gulf of Mexico level. The runoff is through numerous sluggish streams or bayous, which flow through lakes and marshland. The larger marshlands are mainly in the coastal area, extending farthest inland in the southeast. A great part of the southwestern region of the state is drained through the Calcasieu River. The principal influences that determine the climate of Louisiana are its subtropical latitude and its proximity to the Gulf of Mexico. The average water temperatures of the Gulf of Mexico along the Louisiana shore range from 64°F in February to 84°F in August.

The average annual temperature is 69°F in the Project area. The number of days with temperatures equal to or greater than 90°F averages 75 days. Temperatures dip below freezing on average about 10 days per year in the Project vicinity. The Project area receives an annual average of 57.2 inches of rain. February is typically the driest month of the year with a monthly mean of 3.3 inches, whereas June tends to be the wettest month with a monthly mean of 6.1 inches. Rains of as much as 20 inches in a month have occurred, and as much as 10 inches of rain in 24 hours is not rare. Proximity to the Gulf of Mexico and the Calcasieu River means that humidity in the Project area is relatively high. Snow events are rare, with an annual mean of 0.3 inch of snow, which is most likely to occur in January or February.

Wind direction in the Project area is dependent on the time of year. Spring and summer months experience winds coming from the south, whereas during the fall and winter months wind direction is typically from the north or northeast. In summer, the prevailing southerly winds provide moist, semitropical weather often favorable for afternoon thunderstorms. With westerly to northerly winds, periods of hotter and drier weather interrupt the prevailing moist condition. In the colder season, the area is subject alternately to tropical air and cold, continental air, in periods of varying length (NOAA, 2022b).

4.11.1.2 Existing Air Quality

Air quality would be affected by construction and operation of the Project. Commonwealth would construct natural gas liquefaction and export facilities in Cameron Parish, Louisiana. The proposed Project would include six liquefaction trains with ancillary utilities and support facilities; two flare systems; six LNG storage tanks; one marine facility consisting of an LNG carrier berth, barge dock, and turning basin; a 26-foot storm surge protection concrete wall; operation and safety systems; approximately 3 miles of 30-

inch-diameter pipeline; two interconnection facilities with existing pipelines; and one metering station. This section describes existing laws and regulations relevant to air quality and the potential effects related to air quality that would result from implementation of the Project.

Ambient Air Quality Standards

The EPA has established NAAQS for the following “criteria” pollutants: carbon monoxide (CO), NO₂, O₃, particulate matter (PM) less than 10 microns in diameter (PM₁₀), PM less than 2.5 microns in diameter (PM_{2.5}), sulfur dioxide (SO₂), and lead (Pb). O₃ forms in the atmosphere as a result of a chemical reaction between nitrogen oxides (NO_x) and VOCs in the presence of sunlight. Therefore, NO_x and VOCs are often referred to as O₃ precursors. PM_{2.5} may be directly emitted and can be secondarily formed in the atmosphere as a result of SO₂ and NO_x emissions. SO₂ and NO_x are also referred to as PM_{2.5} precursors. Lead emissions are primarily generated by industry such as ore and metals processing, waste incinerators, lead-acid battery manufacturers, and lead smelters. Because there are no sources of lead emissions associated with the Project, lead is not carried forward in the air analysis.

There are two classifications of NAAQS: primary and secondary standards. Primary standards set limits the EPA believes are necessary to protect human health, including sensitive populations such as children, the elderly, and asthmatics. Secondary standards are set to protect public welfare from detriments such as reduced visibility and damage to crops, vegetation, animals, and buildings. States have the authority to adopt ambient air quality standards if they are at least as stringent as the NAAQS. While states can promulgate more stringent standards than the NAAQS, the LDEQ has adopted all NAAQS established by the EPA (LDEQ, 2015). Table 4.11.1-1 lists the NAAQS for the criteria pollutants described above.

TABLE 4.11.1-1

National Ambient Air Quality Standards

| Pollutant | Primary/ Secondary | Averaging Time | Level | Form |
|-----------------------------------|-----------------------|-------------------------|---------------------------|---|
| CO a/ | Primary | 8 hours | 9 parts per million | Not to be exceeded more than once per year |
| | | 1 hour | 35 ppm | |
| Pb | Primary and secondary | Rolling 3-month average | 0.15 µg/m ³ b/ | Not to be exceeded |
| NO ₂ | Primary | 1 hour | 100 parts per billion | 98 th percentile of 1-hour daily maximum concentrations, averaged over 3 years |
| | Primary and secondary | 1 year | 53 ppb c/ | Annual Mean |
| Ozone (O ₃) d/ | Primary and secondary | 8 hours | 0.070 ppm e/ | Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years |
| PM _{2.5} | Primary | 1 year | 12.0 µg/m ³ | Annual mean, averaged over 3 years |
| | Secondary | 1 year | 15.0 µg/m ³ | Annual mean, averaged over 3 years |
| | Primary and secondary | 24 hours | 35 µg/m ³ | 98 th percentile, averaged over 3 years |
| PM ₁₀ | Primary and secondary | 24 hours | 150 µg/m ³ | Not to be exceeded more than once per year on average over 3 years |
| Sulfur Dioxide (SO ₂) | Primary | 1 hour | 75 ppb f/ | 99 th percentile of 1-hour daily maximum concentrations, averaged over 3 years |
| | Secondary | 3 hours | 0.5 ppm | Not to be exceeded more than once per year |

Source: EPA, 2016.

a/ The federal primary standards for CO are also listed as a secondary standards in LAC 33:711 (LDEQ, 2015).

b/ In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m³ as a calendar quarter average) also remain in effect.c/ The level of the annual NO₂ standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.d/ Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O₃ standards additionally remain in effect in some areas. Revocation of the previous (2008) O₃ standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

e/ Federal ozone standard in LAC 33:711 has not been updated to the 2015 standard (0.070 ppm) (LDEQ, 2015).

f/ The previous SO₂ standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO₂ standards or is not meeting the requirements of a SIP call under the previous SO₂ standards (40 CFR 50.4(3)). An SIP call is an EPA action requiring a state to resubmit all or part of its SIP to demonstrate attainment of the required NAAQS.**Air Quality Control Regions and Attainment Status**

Air Quality Control Regions (AQCRs) are areas established for air quality planning purposes in which implementation plans describe how ambient air quality standards will be achieved and maintained. AQCRs were established by the EPA and local agencies, in accordance with Section 107 of the CAA and its amendments, to implement the CAA and comply with the NAAQS through SIPs. The AQCRs are intrastate and interstate regions, such as large metropolitan areas, where the improvement of the air quality in one portion of the AQCR requires emission reductions throughout the AQCR.

Each AQCR, or portion(s) of an AQCR, is classified as either “attainment,” “non-attainment,” “unclassifiable,” or “maintenance” with respect to the NAAQS. Areas where ambient air concentrations of the criteria pollutants are below the levels listed in the NAAQS are considered in attainment. If ambient air concentrations of criteria pollutants are above the NAAQS levels, then the area is designated non-attainment. Areas that have been designated non-attainment but have since demonstrated compliance with the NAAQS are reclassified, upon approval by EPA, as a maintenance area for that pollutant. Maintenance areas are treated similarly to attainment areas for the permitting of stationary sources; however, specific provisions may be incorporated through the state’s approved maintenance plan to ensure that air quality will remain in compliance with the NAAQS for that pollutant. Maintenance areas retain the classification for 20 years before being reclassified as attainment areas. Areas where air quality data are not available are unclassifiable and are treated as attainment areas.

The entire Project area (including the Terminal and Pipeline) is in the Southern Louisiana–Southeast Texas Interstate AQCR (40 CFR 81.53), which includes Cameron Parish. Likewise, LNG carrier transit would impact the same AQCR. Cameron Parish, where the facility would operate and the transits occur, meets or exceeds the NAAQS for all criteria pollutants and is in attainment.

Air Quality Monitoring and Existing Air Quality

Along with state and local agencies, the EPA created a network of ambient air quality monitoring stations that collect data on background concentrations of criteria pollutants across the United States. The state and local agency sites are designated as part of the State and Local Air Monitoring Stations (SLAMS). National Air Monitoring Stations and Photochemical Air Monitoring Stations are a subset of SLAMS (EPA, 1998). To characterize the existing ambient air quality for the proposed Project, data were gathered from SLAMS sites that are closest to and most representative of the Project site.

TABLE 4.11.1-2

Nearest or Most Representative Air Quality Monitoring Stations a/

| Station Name | Criteria Pollutant | Location (Site ID) | Distance and Direction to Project Site |
|-----------------------------|------------------------------------|------------------------------------|--|
| Carlyss Station | O ₃ | Carlyss, LA (22-019-0002) | 25 miles North |
| SETRPC 40 Sabine Pass | | Sabine Pass, TX (48-245-0101) | 33 miles West |
| Vinton Station | O ₃ , PM _{2.5} | Vinton, LA (22-019-0009) | 34 miles Northwest |
| Westlake Station | SO ₂ , NO ₂ | Westlake, LA (22-019-0008) | 35 miles North |
| Port Arthur Memorial School | PM _{2.5} | Port Arthur, TX (48-245-0021) | 35 miles Northwest |
| Nederland High School | CO | Nederland, TX (48-245-1035) | 42 miles Northwest |
| Lafayette/USGS Station | PM ₁₀ | Lafayette, Louisiana (22-055-0007) | 85 miles Northeast |

a/ EPA 2019a

For O₃, the closest SLAMS site is in Carlyss, Louisiana (Calcasieu Parish). In Texas, the Sabine Pass O₃ monitoring station lies about 33 miles to the west. For PM_{2.5} and O₃, the Vinton Louisiana monitoring station (Calcasieu Parish) lies about 34 miles north of the Project site. The closest site for NO₂ and SO₂ monitoring is in Westlake, Louisiana, approximately 35 miles north of the Project site. For CO, the closest site is a monitoring location in Nederland, Texas, which is 42 miles northwest of the Project site. For PM₁₀, the closest monitoring site is at the USGS facility in Lafayette, Louisiana, 85 miles northeast of the Project site. Table 4.11.1-2 provides information on these SLAMS sites.

Table 4.11.1-3 shows monitoring data for criteria pollutants for 2016 to 2019, as applicable, from the monitoring sites, along with the appropriate primary NAAQS standard. All monitored values were below the NAAQS.

TABLE 4.11.1-3

SLAMS Data and NAAQS a/

| Station Name | Criteria Pollutant | Data b/ | NAAQS |
|-----------------------------|---------------------------|---------|-------------------------|
| Carlyss Station | O ₃ | 0.065 | 0.70 ppm |
| SETRPC 40 Sabine Pass | O ₃ | 0.068 | 0.70 ppm |
| Vinton Station | O ₃ | 0.064 | 0.70 ppm |
| | PM _{2.5} annual | 7.76 | 12/15 µg/m ³ |
| | PM _{2.5} 24-hour | 21.2 | 35 µg/m ³ |
| Westlake Station | SO ₂ 3-hour | 0.04 | 0.5 ppm |
| | SO ₂ 1-hour | 28.6 | 75 ppb |
| | NO ₂ annual | 6.6 | 53 ppb |
| | NO ₂ 1-hour | 38.8 | 100 ppb |
| Port Arthur Memorial School | PM _{2.5} annual | 9.6 | 12.0 µg/m ³ |
| | PM _{2.5} 24-hour | 21 | 35 µg/m ³ |
| Nederland High School | CO 8-hour | 0.5 | 9 ppm |
| | CO 1-hour | 1.0 | 35 ppm |
| Lafayette/USGS Station | PM ₁₀ | 80 | 150 µg/m ³ |

a/ EPA 2019a

b/ Values based on NAAQS criteria; where required, 3-year period = 2016–2018 except for Port Arthur PM_{2.5}, which does not have a full 3-year set of data; 205 days of data from 2019 were used to represent year 3 and will be updated in future versions.**Greenhouse Gases**

Greenhouse gases (GHGs) occur in the atmosphere both naturally and as a result of human activities, such as the burning of fossil fuels. These gases are the integral components of the atmosphere's greenhouse effect, which warms the Earth's surface and moderates day/night temperature variation. In general, the most abundant GHGs are water vapor, CO₂, methane (CH₄), nitrous oxide (N₂O), and O₃. On December 7, 2009, the EPA defined air pollution to include a mix of six long-lived and directly emitted GHGs, finding that the presence of the following GHGs in the atmosphere may endanger public health and welfare through climate change: CO₂, CH₄, N₂O, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Though the EPA's finding was based on emissions associated with new motor vehicles, the EPA has expanded its regulations to include the emission of GHGs from major stationary sources under the PSD program. The EPA's current rules require that a stationary source must be regulated as a major source for a non-GHG pollutant to be evaluated as a major source for GHGs. As a result, New Source Review (NSR) sources must also obtain a GHG PSD permit prior to beginning construction of a new major source with significant net emission increases of carbon dioxide equivalent (CO₂e) equal to or greater than 75,000 tons per year (tpy). There are no NAAQS for GHGs.

The principal GHGs that would be produced by the Project are CO₂, CH₄, and N₂O. Emissions of GHGs are quantified and regulated in units of CO₂e. The CO₂e unit of measure takes into account the global warming potential (GWP) of each GHG. The GWP is a ratio relative to CO₂ that is based on the particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. Thus, for a 100-year horizon, CO₂ has a GWP of 1, CH₄ has a GWP of 25, and N₂O has a GWP of 298 (Intergovernmental Panel on Climate Change, 2021). To obtain the CO₂e quantity, the mass of the particular compound is multiplied by the corresponding GWP, the product of which is the CO₂e for that

compound. The CO₂e value for each of the GHG compounds is then summed to obtain the total CO₂e GHG emissions.

4.11.1.3 Regulatory Requirements for Air Quality

The Project would be potentially subject to a variety of federal and state regulations pertaining to the construction of the Terminal and Pipeline, and operation of air emission sources. The following sections summarize the applicability of various state and federal regulations.

Federal Air Quality Requirements

The CAA, 42 USC 7401 et seq., as amended in 1977 and 1990, and 40 CFR Parts 50 through 99 are the basic federal statutes and regulations governing air pollution in the United States. The following federal requirements have been reviewed for applicability to the Project:

- NSR/PSD;
- New Source Performance Standards (NSPS);
- National Emission Standards for Hazardous Air Pollutants (NESHAP);
- Title V Operating Permits;
- General Conformity; and
- Greenhouse Gas Reporting.

New Source Review/Prevention of Significant Deterioration

Federal preconstruction review for sources in nonattainment areas is referred to as Nonattainment New Source Review, while federal preconstruction review for sources in attainment areas is referred to as PSD. The review process aids in preventing new sources and modifications to existing systems from causing existing air quality to deteriorate beyond acceptable levels.

A source is classified as PSD major if it has the potential to emit (PTE) more than 100 tpy of a pollutant regulated under the CAA and it is listed in one of the 28 named source categories in Section 169 of the CAA, or if it has PTE more than 250 tpy and is not listed in one of the 28 named source categories in Section 169 of the CAA. If a new source is determined to be a major source for any criteria pollutant, then other PSD pollutants would be subject to PSD review if those pollutants are emitted at rates that exceed significant emission rates (SERs). These include criteria pollutants (100 tpy for CO; 40 tpy for NO_x, VOC, and SO₂; 25 tpy for total suspended particulate; 15 tpy for PM₁₀ and 10 tpy for [direct] PM_{2.5}) and non-criteria pollutants (10 tpy for H₂S; 7 tpy for sulfuric acid mist; and 75,000 tpy for CO₂e). Sources that exceed the major source threshold are then subject to a PSD review.

The Pipeline would not include any stationary combustion sources of emission and would only emit fugitive natural gas during operation. Emissions from the Terminal would be above the PSD major source thresholds for NO_x and CO. If a source is subject to PSD review for one regulated pollutant, the source is also subject to PSD review for all other pollutants causing a significant increase in emissions level, as noted above. For this reason, the new Terminal facility would be subject to PSD review.

New Source Performance Standards

The NSPS, codified in 40 CFR 60, regulate emission rates and provide requirements for new or significantly modified sources. NSPS requirements include emission limits, monitoring, reporting, and record keeping.

Applicable NSPS for the Project, based on the types of emission units and the expected date of installation, would potentially include, but not be limited to, the subparts listed below.

- 40 CFR 60 Subpart A – General Provisions. Subpart A contains the general requirements applicable to all emission units subject to 40 CFR 60.
- 40 CFR 60 Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units. Subpart Db applies to each steam generating unit for which construction, modification, or reconstruction is commenced after June 19, 1984, and which has a maximum design heat input capacity of greater than 29 megawatts (100 MMBtu/hr [million British thermal units per hour]). Commonwealth would operate the hot oil heaters at the Terminal in compliance with Subpart Db.
- 40 CFR Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (including Petroleum Liquid Storage Vessels). This subpart applies to each storage vessel with a capacity greater than or equal to 75 m³ that is used to store volatile organic liquids for which construction, reconstruction, or modification is commenced after July 23, 1984. This subpart does not apply to storage vessels with a capacity greater than or equal to 151 m³ storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals or with a capacity greater than or equal to 75 m³ but less than 151 m³ storing a liquid with a maximum true vapor pressure less than 15.0 kilopascals. This subpart sets standards for VOC emissions reduction. This subpart applies to any condensate/off-specification fuel storage tank at the Terminal. Commonwealth would comply with all applicable Subpart Kb standards and requirements for monitoring, recordkeeping, and reporting.
- 40 CFR Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Subpart IIII applies to owners and operators of stationary Compression Ignition Internal Combustion Engines as described in the subpart. This subpart sets emission standards for NO_x plus non-methane hydrocarbons, CO, and PM. This subpart applies to emergency generators and firewater pumps slated for the Terminal. Commonwealth would comply with all applicable Subpart IIII standards and requirements for monitoring, recordkeeping, and reporting.
- 40 CFR Subpart KKKK – Standards of Performance for Stationary Combustion Turbines. This subpart applies to stationary combustion turbines that commenced construction, modification, or reconstruction after February 18, 2005, and have a heat input at peak load equal to or greater than 10.7 gigajoules per hour (10 MMBtu/hr). The proposed compressor gas turbines would be subject to NSPS Subpart KKKK as their fuel heat input ratings would exceed 10 MMBtu/hr, and their manufacturing date would be after February 18, 2005. Subpart KKKK regulates emissions of NO_x and SO₂. The turbines would be subject to a NO_x emission limit of 25 parts per million (ppm) at 15 percent oxygen. Commonwealth would comply with the fuel sulfur requirements by using fuel with sulfur content at or below 0.060 pound of SO₂ per MMBtu. Commonwealth would comply with all applicable Subpart KKKK standards and requirements for monitoring, recordkeeping, and reporting.

National Emissions Standards for Hazardous Air Pollutants

The NESHAPs, codified in 40 CFR 61 and 63, regulate the emissions of HAPs from new and existing sources. Part 61, promulgated before the 1990 CAA Amendments, regulates eight hazardous substances: asbestos, benzene, beryllium, coke oven emissions, inorganic arsenic, mercury, radionuclides, and vinyl chloride.

The 1990 CAA Amendments established a list of 189 HAPs, resulting in the promulgation of Part 63, also known as the Maximum Achievable Control Technology standards. Part 63 regulates HAPs from major sources of HAPs and specific source categories emitting HAPs. Some NESHAPs may apply to non-major sources (area sources) of HAPs. Major source thresholds for NESHAPs are 10 tpy of any single HAP or 25 tpy of total HAPs. The highest single total HAP of 1.44 tons per year is expected from each of the refrigeration units (RCT A-F), and generators (GCT A-C). The Terminal would not emit more than 18.4 tpy of all HAPs combined. Therefore, the Project would not be a major source for HAPs and only those NESHAPs for relevant area sources at the Project would be applicable. NESHAPs that are applicable to the Terminal site are listed below.

Applicable NESHAPs for the Project, based on the types of emission units and the expected date of installation, would potentially include, but not be limited to, the subparts listed below.

- 40 CFR 63 Subpart A – General Provisions. Subpart A contains the general requirements applicable to all emission units subject to 40 CFR 63.
- 40 CFR 63 Subpart HHH – National Emission Standards for Hazardous Air Pollutants from Natural Gas Transmission and Storage Facilities. Although this subpart applies to the facility, there are no glycol dehydration units and thus no applicable requirements.
- 40 CFR 63 Subpart YYYY – National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines. In 2004, the EPA stayed the effectiveness of the emission and operating limitations for lean-premixed gas-fired and diffusion flame gas-fired turbines. These turbines must only comply with the initial notification requirements at this time.
- 40 CFR 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants Reciprocating Internal Combustion Engines (RICE). Subpart ZZZZ applies to any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions. For stationary RICE located at an area source of HAP emissions, a stationary RICE is “existing” if construction or reconstruction of the stationary RICE commenced before June 12, 2006. A stationary RICE located at an area source of HAP emissions is “new” if construction of the stationary RICE commenced on or after June 12, 2006. For area sources, this subpart sets operating limitations and emission limitations for CO and formaldehyde, as well as management practices and work practice standards. This subpart applies to the diesel emergency engines and diesel firewater pumps slated for the Terminal. Commonwealth would comply with all applicable Subpart ZZZZ standards and requirements for monitoring, recordkeeping, and reporting.
- 40 CFR 63 Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters. This subpart applies to major source of HAPs, specifically the hot oil heaters planned for the Terminal. Commonwealth would comply with all applicable Subpart DDDDD standards and requirements for monitoring, recordkeeping, and reporting.

Title V Operating Permit

The required elements of Title V operating permit programs are outlined in 40 CFR 70 and 40 CFR 71. Title V operating permits may be referred to as “Part 70” or “Part 71” permits, or as Title V permits. A Title V permit should list all air pollution requirements that apply to the source, including emissions limits

and monitoring, recordkeeping, and reporting requirements. Regulations also require that the permittee annually report the compliance status of its source with respect to permit conditions to the corresponding regulatory agency.

A Title V major source, as defined in 40 CFR 70.2, is a source or group of stationary sources (including new and existing sources) within a contiguous area and under common control, emitting or with the PTE criteria pollutants or HAPs above the criteria pollutant threshold values. The Title V major source threshold is 100 tpy for any of the criteria pollutants, 10 tpy for any single HAP, and 25 tpy for any combination of HAPs. The Project would be subject to Title V permitting requirements.

General Conformity

General Conformity regulations are designed to ensure that federal actions within nonattainment and maintenance areas do not interfere with a state's ability to attain or maintain compliance with NAAQS. As part of the general conformity applicability determination process, the sum of non-exempt direct and indirect emissions of nonattainment pollutants or designated precursors associated with a federal action is compared to the General Conformity applicability *de minimis* levels in 40 CFR Part 93.153. If an applicability threshold is exceeded, then general conformity applies, and a conformity determination is required. If emissions are below the applicability thresholds, the emissions are considered *de minimis*, General Conformity requirements do not apply, and a conformity determination is not required.

The new Terminal facility would be entirely within an attainment/unclassifiable area and therefore would not be subject to General Conformity. The closest nonattainment areas to the Project site are the Houston-Galveston-Brazoria O₃ nonattainment area, west of the Project site, and the St. Bernard Parish New Orleans) SO₂ nonattainment area, east of the Project site. LNG vessels calling at the Terminal would not transit through these areas and therefore would not contribute to emissions in the areas. Vessels delivering construction equipment to the Project site would likely pass through the Houston-Galveston-Brazoria O₃ nonattainment area when traveling from Corpus Christi. However, the emissions from these vessels would be considered *de minimis* and therefore General Conformity requirements would not apply.

GHG Reporting Rule

In September 2009, the EPA issued the final Mandatory Reporting of Greenhouse Gases Rule, requiring reporting of GHG emissions from suppliers of fossil fuels and facilities that emit greater than or equal to 25,000 metric tpy of GHG (reported as CO_{2e}). In November 2010, the EPA signed a rule finalizing GHG reporting requirements for the petroleum and natural gas industry in 40 CFR Part 98, Subpart W. The industry separates LNG storage facilities from LNG import and export equipment because the former are considered part of the source category regulated by Subpart W. The rule does not apply to construction emissions.

The Terminal facility would be subject to the GHG Mandatory Reporting Rule. The rule establishes reporting requirements based on actual emissions; however, it does not require emission controls. Commonwealth would monitor emissions in accordance with the reporting rule. If actual emissions exceed the 25,000 metric tpy CO_{2e} reporting threshold, Commonwealth would be required to report its GHG emissions to the EPA. Commonwealth would calculate the actual GHG emissions from the Project and report GHGs in compliance with the GHG Mandatory Reporting Rule.

Applicable State Air Quality Regulations

In addition to the federal regulations identified above, the LDEQ has its own air quality regulations and is the lead air permitting authority for the Project. The LDEQ's air quality regulations are codified in LAC Title 33, Part III, Chapters 1 through 59. The regulations incorporate the federal program requirements listed in 40 CFR 50 through 99 and establish permit review procedures for all facilities that

can emit pollutants to the ambient air. Louisiana also requires applicants for an air quality permit to prepare an environmental assessment statement pursuant to state-only requirements set forth in Louisiana Revised Statute 30:2018.A. New facilities are required to obtain an air quality permit prior to initiating construction. LAC Title 33, Part III, Chapters 1 through 59 set forth the air quality regulations for emission sources in Louisiana. In addition, LAC Title 33, Part III, Chapter 1 delegates authority to the LDEQ to maintain air quality resources in Louisiana and enforce LDEQ air quality regulations. The following regulations are applicable the Project:

- Chapter 2: Rules and Regulations for the Fee System of the Air Quality Control Program;
- Chapter 5: Permit Procedures;
- Chapter 9: General Regulations on Control of Emissions and Emission standards;
- Chapter 11: Control of Air Pollution from Smoke;
- Chapter 13: Emission Standards for Particulate Matter;
- Chapter 15: Emission Standards for Sulfur Dioxide;
- Chapter 21: Control of Emission of Organic Compounds;
- Chapter 51: Comprehensive Toxic Air Pollutant Emission Control Program; and
- Chapter 56: Prevention of Air Pollution Emergency Episodes.

4.11.1.4 Construction Emission Impacts and Mitigation

Emissions during Terminal and Pipeline construction would generally be associated with onshore construction activities conducted using on-road and off-road mobile equipment and offshore construction activities conducted using marine vessels such as tugboats or barges and a dredging vessel. Commonwealth anticipates construction and commissioning of the Terminal to be completed in approximately 36 to 38 months. Commonwealth would construct the Pipeline over a 12-month period, which would occur concurrently with the Terminal during the second year of construction. Commonwealth expects peak construction emissions would occur over the first 14 months. During this time, most of the concrete materials and pilings would be delivered and Commonwealth would prepare the Terminal site and construct the facility foundations, barge dock, barge dock off-loading platform, and LNG carrier berth. Increases in land vehicle and waterway traffic during this time are described in section 2.5.1.6.

Onshore On-road and Off-road Mobile Equipment Emissions

Potential impacts on ambient air quality for construction projects typically include generation of combustion and fugitive dust emissions from mobile construction equipment operation. Combustion emissions would occur as tailpipe emissions from gasoline- or diesel-fueled engines in on-road and off-road mobile equipment.

Fugitive dust results from construction activities such as land clearing, grading, excavation, and concrete work, as well as from vehicles traveling on paved and unpaved roads. Fugitive dust generation depends on the area of construction, silt and moisture contents of the soil, wind speed, frequency of precipitation, amount of vehicle traffic, and vehicle and roadway type. Fugitive dust would be produced during all phases of construction. The control of fugitive particulate emissions is typically addressed through compliance with state or local nuisance regulations such as 33 LAC Part 3, Chapter 13, §1305. Table 4.11.1-4 provides a summary of expected combustion and fugitive dust construction emissions.

Construction is anticipated to occur during 2023 to 2026. Equipment used for the Terminal and Pipeline construction would contribute GHG emissions, which are estimated here as CO₂e.⁸⁶

86 Commonwealth's supporting calculations, emissions factors, fuel consumption rates, vehicle power ratings, utilization rates, and estimated hours of operation used to estimate construction emissions are available as appendix A of accession number [20220728-5187](#) on the FERC docket.

TABLE 4.11.1-4

Summary of Terminal and Pipeline On-road and Off-road Mobile Equipment and Fugitive Dust Construction Phase Emissions a/ (Tons)

| Year | Facility | Emission Source | NOx | SO ₂ | CO | PM ₁₀ | PM2.5 | VOC | CO ₂ | CH4 | N2O | CO _{2e} b/ | HAP |
|------|----------|----------------------------|-------------|-----------------|-------------|------------------|-------------|-------------|-----------------|-------------|-------------|---------------------|-------------|
| 2023 | Terminal | Commuter transit | 0.97 | 4.3E-3 | 5.96 | 0.08 | 0.04 | 0.13 | 825 | 0.02 | 2.9E-3 | 826 | 0.02 |
| | | Material delivery vehicles | 0.69 | 1.3E-3 | 0.39 | 0.03 | 0.01 | 0.02 | 381 | 3.2E-3 | 4.1E-4 | 381 | 2.2E-3 |
| | | On-road vehicles | 0.15 | 2.9E-4 | 0.14 | 8.1E-3 | 4.0E-3 | 9.2E-3 | 86.6 | 7.4E-4 | 1.4E-4 | 86.6 | 1.2E-3 |
| | | Off-road equipment | 13.3 | 23.2 | 7.40 | 1.35 | 1.35 | 0.91 | 2,370 | 1.10 | 0.09 | 2,424 | 0.09 |
| | | Barge deliveries | 4.73 | 0.06 | 1.10 | 0.14 | 0.13 | 0.13 | 333 | 0.04 | 9.7E-4 | 334 | 9.0E-3 |
| | | Open burning | - | - | - | - | - | - | - | - | - | - | - |
| | | Fugitive dust c/ | - | - | - | 33.7 | 3.42 | - | - | - | - | - | - |
| | | 2023 Subtotal | 19.9 | 23.3 | 15.0 | 35.3 | 4.95 | 1.20 | 3,995 | 1.16 | 0.09 | 4,052 | 0.11 |
| 2024 | Terminal | Commuter transit | 2.92 | 0.01 | 19.8 | 0.28 | 0.12 | 0.37 | 2,812 | 0.06 | 9.7E-3 | 2,816 | 0.04 |
| | | Material delivery vehicles | 0.64 | 1.2E-3 | 0.37 | 0.03 | 0.01 | 0.02 | 373 | 3.0E-3 | 4.1E-4 | 373 | 1.9E-3 |
| | | On-road vehicles | 0.62 | 1.3E-3 | 0.58 | 0.03 | 0.02 | 0.03 | 380 | 3.2E-3 | 6.1E-4 | 380 | 4.3E-3 |
| | | Off-road equipment | 41.1 | 46.5 | 12.5 | 3.32 | 3.32 | 2.46 | 11,192 | 0.36 | 0.52 | 11,355 | 0.22 |
| | | Barge deliveries | 17.0 | 0.23 | 3.97 | 0.49 | 0.48 | 0.47 | 1,199 | 0.16 | 3.5E-3 | 1,204 | 0.03 |
| | | Open burning | 0.43 | - | 15.1 | - | - | 2.05 | 390 | 0.62 | - | 406 | - |
| | | Fugitive dust c/ | - | - | - | 67.4 | 6.83 | - | - | - | - | - | - |
| | Pipeline | Commuter transit | 6.4E-4 | 1.4E-5 | 0.02 | 1.7E-4 | 3.4E-5 | 1.6E-4 | 2.05 | 5.5E-5 | 7.6E-6 | 2.06 | 1.2E-5 |
| | | On-road vehicles | 8.6E-3 | 1.7E-5 | 5.0E-3 | 3.9E-4 | 1.7E-4 | 2.4E-4 | 4.97 | 4.0E-5 | 5.5E-6 | 4.97 | 2.6E-5 |
| | | Off-road equipment | 1.77 | 0.01 | 9.51 | 0.09 | 0.09 | 0.41 | 823 | 0.03 | 0.04 | 835 | 0.02 |
| | | Open burning | - | - | - | - | - | - | - | - | - | - | - |
| | | Fugitive dust c/ | - | - | - | 23.5 | 2.41 | - | - | - | - | - | - |
| | | 2024 Subtotal | 64.5 | 46.8 | 61.9 | 95.2 | 13.3 | 5.82 | 17,175 | 1.22 | 0.57 | 17,375 | 0.32 |

TABLE 4.11.1-4

Summary of Terminal and Pipeline On-road and Off-road Mobile Equipment and Fugitive Dust Construction Phase Emissions a/ (Tons)

| Year | Facility | Emission Source | NOx | SO ₂ | CO | PM ₁₀ | PM2.5 | VOC | CO ₂ | CH ₄ | N ₂ O | CO _{2e} b/ | HAP |
|------|----------|----------------------------|-------------|-----------------|-------------|------------------|-------------|-------------|-----------------|-----------------|------------------|---------------------|-------------|
| 2025 | Terminal | Commuter transit | 2.99 | 0.02 | 21.6 | 0.31 | 0.12 | 0.38 | 3,147 | 0.06 | 0.01 | 3,152 | 0.04 |
| | | Material delivery vehicles | 0.61 | 1.2E-3 | 0.36 | 0.03 | 0.01 | 0.02 | 365 | 2.8E-3 | 4.1E-4 | 366 | 1.7E-3 |
| | | On-road vehicles | 0.25 | 5.5E-4 | 0.25 | 0.01 | 6.4E-3 | 0.01 | 165 | 1.3E-3 | 2.7E-4 | 166 | 1.6E-3 |
| | | Off-road equipment | 26.7 | 46.5 | 9.80 | 2.60 | 2.60 | 1.16 | 4,875 | 0.16 | 0.22 | 4,945 | 0.28 |
| | | Barge deliveries | 16.3 | 0.22 | 3.79 | 0.47 | 0.46 | 0.45 | 1,145 | 0.15 | 3.3E-3 | 1,149 | 0.03 |
| | Pipeline | Open burning | - | - | - | - | - | - | - | - | - | - | - |
| | | Fugitive dust c/ | - | - | 67.4 | 6.83 | - | - | - | - | - | - | - |
| | | Commuter transit | 6.4E-4 | 1.4E-5 | 0.02 | 1.7E-4 | 3.4E-5 | 1.6E-4 | 2.05 | 5.5E-5 | 7.6E-6 | 2.06 | 1.2E-5 |
| | | On-road vehicles | 8.6E-3 | 1.7E-5 | 5.0E-3 | 3.9E-4 | 1.7E-4 | 2.4E-4 | 4.97 | 4.0E-5 | 5.5E-6 | 4.97 | 2.6E-5 |
| | | Off-road equipment | 0.45 | 1.8E-3 | 0.17 | 0.03 | 0.03 | 0.08 | 264 | 8.4E-3 | 0.01 | 268 | 5.6E-3 |
| 2026 | Terminal | Fugitive dust c/ | - | - | 5.87 | 0.60 | - | - | - | - | - | - | - |
| | | 2025 Subtotal | 47.2 | 46.7 | 36.0 | 76.8 | 10.7 | 2.09 | 9,968 | 0.38 | 0.25 | 10,052 | 0.37 |
| | | Commuter transit | 2.99 | 0.02 | 21.6 | 0.31 | 0.12 | 0.38 | 3,147 | 0.06 | 0.01 | 3,152 | 0.04 |
| | | Material delivery vehicles | 0.61 | 1.2E-3 | 0.36 | 0.03 | 0.01 | 0.02 | 365 | 2.8E-3 | 4.1E-4 | 366 | 1.7E-3 |

TABLE 4.11.1-4

Summary of Terminal and Pipeline On-road and Off-road Mobile Equipment and Fugitive Dust Construction Phase Emissions a/ (Tons)

| Year | Facility | Emission Source | NOx | SO ₂ | CO | PM ₁₀ | PM2.5 | VOC | CO ₂ | CH ₄ | N ₂ O | CO _{2e} b/ | HAP |
|------|----------------------|-----------------|--------------|-----------------|--------------|------------------|--------------|---------------|-----------------|-----------------|------------------|---------------------|-----|
| | Open burning | - | - | - | - | - | - | - | - | - | - | - | - |
| | Fugitive dust c/ | - | - | - | 33.7 | 3.42 | - | - | - | - | - | - | - |
| | 2026 Subtotal | 30.5 | 46.5 | 32.0 | 36.7 | 6.16 | 1.57 | 8,552 | 0.22 | 0.24 | 8,628 | 0.33 | |
| | TOTAL | 162.1 | 163.3 | 144.9 | 244.0 | 35.11 | 10.68 | 39,690 | 2.98 | 1.15 | 40,107 | 1.13 | |

a/ Construction emissions encompass commuter transit vehicles, materials delivery vehicles, on-road construction vehicles, off-road equipment (including dredging equipment and vessels), and open burning emissions.

b/ CO_{2e} emission factors for off-road vehicles, equipment, and vessels are calculated using CO₂, CH₄, and N₂O global warming potentials of 1, 25, and 298, respectively.

c/ Fugitive dust emissions from WRAP Fugitive Dust Handbook, Cogness Environmental, September 2006

Offshore Marine Vessel Emissions

Criteria air pollutant emissions from marine vessel operations would also be expected during the construction period. The emissions would come from vessels, tugboats, and barges carrying materials and equipment needed for construction of the Project traveling to and from the place of origin by barge to the supply docks. Marine vessel traffic emissions listed in table 4.11.1-5 would be anticipated across the 3-year construction period. Barges are expected to deliver construction supplies such as precast concrete materials and pilings over the first 19 months of construction. Once the facility foundations are in place and the barge dock and off-loading platform are constructed, the LNG storage tanks, pre-treatment and liquefaction train modules, and pipe rack modules would be delivered throughout the following 8 months.

Commonwealth anticipates approximately 238 barges would be required to deliver construction components to the Project site. Commonwealth has yet to source the construction components, but expects they would be sourced from, or manufactured in, Louisiana and Texas. For the emissions estimates provided in table 4.11.1-5, we assume the barges would originate from Lake Charles.

The modular portion of the LNG storage tanks would require three total barge deliveries. Two barge deliveries of four LNG storage tanks would likely originate from Corpus Christi, Texas. One barge delivery of two LNG storage tanks would likely originate from Morgan City, Louisiana. Barges originating from Corpus Christi would transit through the Houston-Galveston-Brazoria O₃ nonattainment area en route to the Project site. These barges would emit *de minimis* levels of the O₃ precursors NO_x and VOC. The barges that originate from Morgan City would not transit through a nonattainment or maintenance area. It is conservatively assumed that all three barges would originate from Corpus Christi, which is the farthest potential port from the Project site.

Six barge deliveries of main cryogenic heat exchanger units would originate from Pensacola, Florida. Barges that originate in Pensacola would not transit through a nonattainment or maintenance area. The Gulf Intracoastal Waterway is near, but does not cross, the St. Bernard Parish SO₂ nonattainment area.

Approximately 30 tug-assisted barge deliveries of 60 pipe racks would transit to the Terminal site via the Gulf Intracoastal Waterway from established fabrication yards. There are several fabrication yards with access to the Intracoastal Waterway of Texas and Louisiana that are suited to fabricate the pipe racks. The pipe racks would likely originate in either Corpus Christi or Morgan City. Again, it is conservatively assumed that these barges would originate from Corpus Christi. As noted above, barges originating from Corpus Christi would transit through the Houston-Galveston-Brazoria O₃ nonattainment area; however, the barges would emit *de minimis* levels of the O₃ precursors NO_x and VOC.

The pre-treatment and liquefaction modules would likely be manufactured outside of the United States and would require transport by general cargo carrier vessels. Each vessel would likely transport one pre-treatment module and one liquefaction module. Commonwealth expects that two vessels would be used to transport the 12 modules (i.e., 6 pre-treatment modules and 6 liquefaction modules) to the Terminal site over a 10-month period.

Table 4.11.1-5 provides a summary of construction-related marine vessel emissions. The values, presented in tons per year, encompass the total calculated emissions output of the combined number of transits (i.e., number of barge-calls at the Terminal) from the listed port of origin to the Terminal. Calculations are based on engine emissions values provided by the EPA (2009) and distances to ports provided by NOAA (2019).⁸⁷

⁸⁷ Commonwealth's supporting calculations for its marine vessel emissions are available as appendix A of accession number [20220728-5187](#) on the FERC docket.

TABLE 4.11.1-5

Summary of Construction Phase Material and Equipment Barge Delivery Emissions

| Year | Port of Origin | Barge Calls (#) | Annual Pollutant Emissions by Construction Year (tons) | | | | | | | | | | |
|--------------|----------------|-----------------|--|-------------|------------------|-------------------|-------------|-----------------|-----------------|-----------------|------------------|------------------|-------------|
| | | | NO _x b/ | CO | PM ₁₀ | PM _{2.5} | VOC b/ | SO ₂ | CO ₂ | CH ₄ | N ₂ O | CO _{2e} | |
| 2023 | Lake Charles | 70 | 4.73 | 1.10 | 0.14 | 0.13 | 0.13 | 0.06 | 333 | 0.04 | 9.7E-4 | 334 | 9.0E-3 |
| | Corpus Christi | 0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Pensacola | 0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Subtotal | | 70 | 4.73 | 1.10 | 0.14 | 0.13 | 0.13 | 0.06 | 333 | 0.04 | 9.7E-4 | 334 | 9.0E-3 |
| 2024 | Lake Charles | 119 | 8.04 | 1.87 | 0.23 | 0.23 | 0.22 | 0.11 | 566 | 0.07 | 1.6E-3 | 568 | 0.02 |
| | Corpus Christi | 17 | 8.99 | 2.09 | 0.26 | 0.25 | 0.25 | 0.12 | 633 | 0.08 | 1.8E-3 | 635 | 0.02 |
| | Pensacola | 0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Subtotal | | 136 | 17.03 | 3.97 | 0.49 | 0.48 | 0.47 | 0.23 | 1,199 | 0.16 | 3.5E-3 | 1,204 | 0.03 |
| 2025 | Lake Charles | 49 | 3.31 | 0.77 | 0.10 | 0.09 | 0.09 | 0.04 | 233 | 0.03 | 6.8E-4 | 234 | 6.3E-3 |
| | Corpus Christi | 16 | 8.46 | 1.97 | 0.25 | 0.24 | 0.23 | 0.11 | 596 | 0.08 | 1.7E-3 | 598 | 0.02 |
| | Pensacola | 6 | 4.49 | 1.05 | 0.13 | 0.13 | 0.12 | 0.06 | 316 | 0.04 | 9.2E-4 | 317 | 8.5E-3 |
| Subtotal | | 71 | 16.26 | 3.79 | 0.47 | 0.46 | 0.45 | 0.22 | 1,145 | 0.15 | 3.3E-3 | 1,149 | 0.03 |
| 2026 | Lake Charles | 0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Corpus Christi | 0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Pensacola | 0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Subtotal | 0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Total | | 277 | 38.02 | 8.86 | 1.10 | 1.07 | 1.05 | 0.50 | 2,677 | 0.35 | 0.008 | 2,688 | 0.07 |

a/ The emissions from transport of pre-treatment and liquefaction equipment from outside of the U.S. were not available for this current estimate.

b/ Vessels transiting from Corpus Christi would pass through the Houston-Galveston-Brazoria O₃ nonattainment area; General Conformity *de minimis* emissions thresholds for NO_x and VOC (O₃ precursors) are 100 tons per year.

Mitigation Measures

Terminal construction is estimated to last 36 to 38 months and would involve disturbance of the entire site. Pipeline construction is estimated to last 12 months and would occur concurrently with Terminal construction during the second year of construction. Fugitive dust emissions would range from an estimated maximum of 90.9 tons for PM₁₀ and 9.2 tons of PM_{2.5} in 2024 when initial Terminal and Pipeline construction (e.g., earth moving) would be occurring simultaneously to lows of 33.7 tons of PM₁₀ and 3.4 tons of PM_{2.5} in 2023 and 2026, which are expected to be partial construction years when only the Terminal would be under construction. To minimize impacts on air quality during construction, Commonwealth would adopt the following measures:

- require that contractors meet all air quality requirements and employ equipment that meets relevant emission standards;

- require contractors to properly maintain and operate construction equipment to minimize exhaust emissions, including minimizing engine idling time; use paved roads, when practical; and water unpaved roads, as needed;
- apply water to dirt stockpiles;
- cover open haul trucks, as needed;
- limit vehicle speeds;
- apply water to disturbed areas, as needed; and
- stabilize disturbed areas upon completion of construction.

Vehicular and/or barge exhaust and crankcase emissions from gasoline and diesel engines would comply with applicable EPA mobile source emission regulations (40 CFR 85) by using equipment manufactured to meet these specifications and using commercial gasoline and diesel fuel products that meet specifications of applicable federal and state air pollution control regulations.

The combustion and fugitive dust emissions that would occur during construction would be largely limited to the immediate vicinity of the existing Terminal site and to a lesser extent in the areas where the Pipeline would be constructed. These emissions would represent a small portion of Cameron Parish's yearly emissions inventories and would subside once construction has been completed. Therefore, we conclude the construction-related impact on local air quality during construction of the Terminal and Pipeline would not be significant.

4.11.1.5 Operating Emission Impacts and Mitigation

Commissioning and Start-up Emissions

Commonwealth anticipates that construction of the liquefaction trains would be completed on a staggered basis from the fourth quarter of 2025 through the second quarter of 2026. Commonwealth further anticipates commissioning of the LNG trains and start-up of the Terminal to begin in the fourth quarter of 2025, with all trains commissioned by the third quarter of 2026. The commissioning process would last nine months and would produce emissions separate from construction and operation. Commonwealth anticipates only minor overlap between construction and commissioning activities (e.g., construction of utilities systems or common facilities may overlap with the start of commissioning). Commercial operations at the Terminal would begin after all of the LNG trains have been commissioned. A summary of the emissions associated with the commissioning process is provided in table 4.11.1-6.

TABLE 4.11.1-6

Estimated Combined Commissioning and Start-Up Emissions (tons) for the 6 LNG Trains

| Year | Equipment | NO _x | SO ₂ | CO | PM ₁₀ | VOC | CO ₂ | CH ₄ | N ₂ O | CO _{2e} b/ | HAP |
|------|---|-----------------|-----------------|------------|------------------|------------|-----------------|-----------------|------------------|---------------------|-------------|
| 2025 | Refrigeration Turbines A, B, C, D, E, F | 2.00 | 0.08 | 13.9 | 1.58 | 0.80 | 7,796 | 0.14 | 0.01 | 7,804 | 0.27 |
| | Power Generation Turbine A | 4.53 | 0.15 | 1.61 | 2.86 | 0.72 | 17,421 | 0.32 | 0.03 | 17,438 | 0.48 |
| | Power Generation Turbine B | 2.26 | 0.07 | 0.81 | 1.43 | 0.36 | 8,710 | 0.16 | 0.02 | 8,719 | 0.24 |
| | Power Generation Turbine C | 2.26 | 0.07 | 0.81 | 1.43 | 0.36 | 8,710 | 0.16 | 0.02 | 8,719 | 0.24 |
| | Startup Hot Oil Heater | 2.59 | 0.02 | 1.56 | 0.14 | 0.71 | 2,572 | 0.05 | 4.7E-03 | 2,574 | 0.05 |
| | Thermal Oxidizer A | 0.47 | 0.61 | 0.22 | 0.03 | 0.01 | 10,331 | 0.01 | 3.3E-03 | 10,332 | 5.6E-03 |
| | Wet Flare | 29.4 | 0.44 | 132 | 3.26 | 259 | 50,402 | 357 | 0.92 | 59,594 | 1.05 |
| | Dry Flare | 26.4 | 0.24 | 119 | 2.89 | 204 | 44,810 | 317 | 0.84 | 52,992 | 0.93 |
| | <i>2025 Commissioning Total</i> | <i>69.9</i> | <i>1.68</i> | <i>270</i> | <i>13.6</i> | <i>466</i> | <i>150,752</i> | <i>675</i> | <i>1.85</i> | <i>168,173</i> | <i>3.26</i> |
| 2026 | Refrigeration Turbines A, B, C, D, E, F | 4.00 | 0.16 | 27.9 | 3.16 | 1.60 | 15,592 | 0.29 | 0.03 | 15,608 | 0.53 |
| | Power Generation Turbine A | 9.05 | 0.29 | 3.23 | 5.71 | 1.44 | 34,842 | 0.64 | 0.06 | 34,877 | 0.96 |
| | Power Generation Turbine B | 4.53 | 0.15 | 1.61 | 2.86 | 0.72 | 17,421 | 0.32 | 0.03 | 17,438 | 0.48 |
| | Power Generation Turbine C | 4.53 | 0.15 | 1.61 | 2.86 | 0.72 | 17,421 | 0.32 | 0.03 | 17,438 | 0.48 |
| | Startup Hot Oil Heater | 5.19 | 0.04 | 3.11 | 0.28 | 0.28 | 5,143 | 0.09 | 9.4E-03 | 5,148 | 0.09 |
| | Thermal Oxidizer A | 0.94 | 1.21 | 0.44 | 0.06 | 0.03 | 20,662 | 0.02 | 6.6E-03 | 20,665 | 0.01 |

TABLE 4.11.1-6

Estimated Combined Commissioning and Start-Up Emissions (tons) for the 6 LNG Trains

| | | | | | | | | | | | | |
|--------------------------|-----------|------|------|-----|------|------|-----|---------|-------|------|---------|------|
| | Wet Flare | 58.7 | 0.88 | 264 | 6.52 | 6.52 | 518 | 100,803 | 714 | 1.83 | 119,189 | 2,10 |
| | Dry Flare | 52.8 | 0.48 | 238 | 5.78 | 5.78 | 407 | 89,620 | 634 | 1.69 | 105,983 | 1,86 |
| 2026 Commissioning Total | | 140 | 3.36 | 540 | 27.2 | 27.2 | 931 | 301,504 | 1,350 | 3.69 | 336,346 | 6.52 |

Routine Operation

Operation of the Project would result in long-term air emissions from the following stationary equipment.

At the Terminal:

- six simple-cycle refrigeration gas turbines, each rated at 58 MW;
- three generator turbines (including one installed spare), each rated at 60 MW;
- one essential generator in the power generation area rated at 4,290 kW;
- three firewater pumphouse diesel generators each rated at 759 kW;
- one firewater lift pump diesel generator rated at 821 kW;
- hot oil start-up fired heater rated at 122 MMBtu/hr;
- six 50,000 m³ LNG storage tanks;
- two thermal oxidizers, each rated at 65.4 MMBtu/hr;
- condensate and refrigerant storage tanks;
- a liquefaction facility flare stack containing: a wet flare, rated at 2.57 million standard cubic feet per hour; a dry flare, rated at 3.17 million standard cubic feet per hour, and a spare flare, sized to control the load of the dry flare;
- a marine facility flare stack containing one marine flare, rated at 2.58 MMBtu/hr;
- gas pre-treatment unit (containing equipment for dehydration and heavy hydrocarbon removal); and
- fugitive emissions from various components.

At the LNG carrier berth:

- LNG carrier loading emissions (emission units located onshore); and
- fugitive emissions from various onshore components.

Emissions common to all facilities:

- vehicle travel emissions.

At the Pipeline:

- pig launcher/receivers;
- meter station;
- block valves; and
- fugitive emissions from various components.

From marine vessels:

- LNG carriers at berth (hoteling emissions);
- escort tugboats;

- LNG carrier movement within state waters; and
- security vessels.

Operational emissions, including combustion and dust emissions, are presented in table 4.11.1-7. We received comments from the public suggesting that we should assess the potential emissions of the Project based on the Terminal operating at full capacity (9.5 MTPA). The modeled emissions output presented herein assume the Terminal would be operating at full capacity. Combustion sources primarily include engines, turbines, heaters/furnaces, and flares. Non-combustion sources primarily include storage tanks, LNG loading and transfer operations, and fugitive emissions from pipeline and equipment leaks. Non-combustion emissions would occur from the Terminal facilities, Pipeline, and meter stations, as well as from one annually scheduled pipeline pigging event. Commonwealth's emissions calculations are based on the detailed Terminal design, regulatory requirements, the Best Available Control Technology (BACT) analysis conducted by Commonwealth for the process equipment, and supplemented by the EPA's Compilation of Air Pollutant Emission Factors (AP-42).⁸⁸

In comments on the draft EIS, EPA requested that Commonwealth identify technologies that it would implement to identify leaking equipment at the Terminal. Commonwealth would employ leak detection methods at the Terminal in accordance with 49 CFR 192.706. Common methods of leak detection include 24-hour per day pressure monitoring of the facilities, monthly volumetric material balances, and annual leakage surveys. To identify leaking equipment such as valves, flanges, and seals, Commonwealth would use a site-specific program using a combination of design and auditory/visual/olfactory leak detection methods. Auditory/visual/olfactory leak detection would involve control system monitoring and routine visual inspections and observations (such as fluids dripping, spraying, misting, or clouding from or around components), sound (such as hissing), and smell. Leaks detected in this manner would be immediately recorded and scheduled for repair in accordance with all applicable laws. Proper design and installation practices would include the following:

- design piping for adequate/desired pressure;
- install proper bracing;
- manually verify all joints are tight;
- confirm all pipes are properly assembled;
- ensure proper seal design/selection;
- ensure proper installation of valve packing or O-rings; and
- manually inspect the installation of the disk gaskets on pressure-relief devices.

Commonwealth Pipeline operations would comply with all applicable PHMSA codes and advisories regarding leak detection and repair and LDEQ air quality regulations. Common methods of leak detection along the Pipeline are consistent with those of the Terminal and also include 24-hour per day pressure monitoring of the Pipeline, monthly volumetric material balances, and annual leakage surveys. Commonwealth would determine specific leak detection methods and technologies for the Terminal and Pipeline during final design of the Project and provide the information to FERC staff.

EPA also requested that Commonwealth provide the methane mitigation measures that it would commit to implementing at the Terminal. Commonwealth would ensure the appropriate piping design and components would be used and installed; equip mechanical seals or an equivalent equipment on all rotary

⁸⁸ The methods and calculations Commonwealth used for its emissions estimates are available as appendices A and C under accession number [20210604-5170](#) on the FERC docket

pumps and compressors that handle VOCs with a true vapor pressure of 1.5 per square inch absolute or greater at handling conditions; and implement a Leak Detection and Repair program that would consist of quarterly monitoring of accessible compressors, pumps, and valves that contain more than 10 percent by weight of VOCs or methane following Method 21 of 40 CFR 60, Appendix A. Method 21 entails determination of VOC leaks using a portable instrument that meets the specifications and performance criteria defined in the code.

Commonwealth is continuing to assess additional measures to implement that would reduce fugitive emissions of methane and other VOCs. These measures would be determined during final design of the Terminal. Mitigation measures for fugitive emissions that Commonwealth would consider include maximizing the use of welded pipe connections; using advanced mechanical couplings and enhanced valve stem seals with minimum leakage rates; implementing compressor-seal gas recovery to capture potential VOC leaks; and using nitrogen to purge flare headers, as opposed to natural gas, which would reduce potential non-combusted methane slippage at the flare pilot from escaping to the atmosphere. Commonwealth would also determine during final design of the Terminal whether to participate in EPA's Natural Gas STAR Program, which provides a framework for U.S. oil and gas company operations to implement methane reducing technologies and practices and document their voluntary emission reduction activities, or EPA's Methane Challenge Program, which consists of transparently reporting systematic and comprehensive actions to reduce methane emissions to be publicly recognized as a leader in reducing methane emissions in the U.S.

TABLE 4.11.1-7

Operational Emissions (tons per year)

| Equipment | NO _x | SO ₂ | CO | PM ₁₀ | PM _{2.5} | VOC | CO _{2e} | HAP |
|--|-----------------|-----------------|------------|------------------|-------------------|------------|------------------|--------------|
| Stationary Emissions Sources | | | | | | | | |
| Refrigeration Combustion Turbines (6) | 136.8 | 18.2 | 56.5 | 136.8 | 136.8 | 57.1 | 1,776,018 | 8.6 |
| Generator Combustion Turbines (3) | 68.4 | 9.1 | 28.3 | 68.4 | 68.4 | 28.6 | 888,009 | 4.3 |
| Essential Generator (1) | 4.00 | 0.003 | 0.57 | 0.03 | 0.03 | 0.15 | 341 | 0.003 |
| Flare Systems (wet, dry, spare, and dock flares) | 147.8 | 1.7 | 804.6 | 16.2 | 16.2 | 23.1 | 298,318 | 5.2 |
| Firewater (3) and Canal (1) Pump Reciprocating Internal Combustion Engines | 1.88 | 0.00 | 0.19 | 0.04 | 0.04 | 0.13 | 220.00 | 0.00 |
| Hot Oil Startup Fired Heater | 6.04 | 0.05 | 3.63 | 0.33 | 0.33 | 0.24 | 5,289 | 0.17 |
| Thermal Oxidizer | 14.04 | 34.04 | 23.59 | 2.13 | 2.13 | 1.88 | 566,344 | 0.06 |
| LNG Tanks (6) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.14 | 0.00 | 0.00 |
| Terminal Fugitive Emissions <u>a/</u> | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 38.58 | 14,149 | 0.00 |
| Pipeline Fugitive Emissions <u>b/</u> | 0 | 0 | 0 | 0 | 0 | 0 | 18.65 | 0 |
| Stationary Emissions Subtotal | 376 | 63 | 917 | 224 | 224 | 152 | 3,548,707 | 18 <u>c/</u> |
| Mobile Emissions Sources | | | | | | | | |
| Worker Vehicle Commutes | 1.48 | 0.006 | 0.002 | 0.003 | 0.003 | 0.01 | 263 | 0.003 |
| Berthed Vessels <u>d/</u> | 158 | 1.11 | 57 | 1.4 | 1.36 | 9.76 | 8,154 | 3.36 |
| Main Propulsion Engines of Vessels in Transit <u>e/</u> | 1.15 | 0.11 | 0.7 | 0.09 | 0.09 | 0.06 | 1,130 | 0.02 |
| Auxiliary Engines of Vessels in Transit <u>f/</u> | 16.42 | 0.09 | 6.21 | 0.08 | 0.08 | 1.12 | 735 | 0.41 |
| Maintenance Dredging <u>g/</u> | 0.73 | 1.345 | 0.105 | 0.065 | 0.065 | 0.001 | 102 | 0.001 |
| Mobile Emissions Subtotal | 178 | 3 | 64 | 2 | 2 | 11 | 10,384 | 4 |
| Total | 554 | 66 | 981 | 226 | 226 | 163 | 3,559,091 | 22 |

TABLE 4.11.1-7

Operational Emissions (tons per year)

| Equipment | NO _x | SO ₂ | CO | PM ₁₀ | PM _{2.5} | VOC | CO _{2e} | HAP |
|---|-----------------|-----------------|----|------------------|-------------------|-----|------------------|-----|
| <p>a/ Sources of fugitive emissions include valves, compressor seals, pump seals, connectors, flanges, open-ended lines and other components (e.g., compressors, diaphragms, drains, dump arms, hatches, instruments, meters, pressure relief valves, polished rods, relief valves, and vents)</p> <p>b/ Pipeline emissions are limited to fugitive GHG emissions.</p> <p>c/ Highest single HAP constituent is formaldehyde (8.01 tpy)</p> <p>d/ Berthed vessel emissions include LNG carrier and tugboat emissions operating in the moored safety zone; these emissions include auxiliary engine operation on the carrier for hoteling at berth; estimates based on 156 LNG carrier calls per year by Kawasaki Sakaide, Mitsubishi Nagasaki or equivalent (NK Class) carriers with capacities equal to or greater than 145,000 cubic meters (which would accommodate export of 9.5 MTPA).</p> <p>e/ Main propulsion engines emissions are based on vessel operations within the 9 nautical mile state water boundary; based on 156 LNG carrier calls per year.</p> <p>f/ Auxiliary engines emissions are based on vessel operations within the 9 nautical mile state water boundary; based on 156 LNG carrier calls per year.</p> <p>g/ Commonwealth expects maintenance dredging to be necessary every 2 years.</p> | | | | | | | | |

4.11.1.6 Air Quality Impacts Analyses for NAAQS and PSD Increments

Commonwealth conducted air dispersion modeling to assess the potential air quality impacts of the Project and show compliance with applicable NAAQS and Class II PSD Increments for the pollutants subject to PSD review. The EPA Guideline on Air Quality Models provides the basic modeling guidance and recommendations of specific air dispersion models for use in assessing potential air quality impacts. The American Meteorological Society/EPA Regulatory Model (AERMOD) is designated by the guideline as a preferred air quality model for assessing potential impacts at receptors within 50 km of a subject source and was used for the Class II air dispersion modeling analysis. We received a comment during scoping and the draft EIS comment period, expressing concern that Commonwealth used a source for ambient meteorological conditions in its AERMOD analyses that is too far from the Project site to be accurate. Commonwealth used the Lake Charles Regional Airport National Weather Service station 03937 based on guidance specified by LDEQ in its Air Quality Modeling Procedures document (LDEQ, 2006). All modeling methods and results are reviewed and assessed for appropriateness and accuracy by LDEQ. Additionally, LDEQ staff provided written confirmation to Commonwealth on June 16, 2022 that the Lake Charles Regional Airport National Weather Service station 03937 was the appropriate meteorological station for Commonwealth to use in the dispersion modeling

Commonwealth conducted a PSD Significance Analysis to determine if emissions from the Project would cause a significant impact. Generally, the PSD Significance Analysis considers emissions only associated with the Project and compares the modeled concentrations to corresponding significant impact levels (SIL) to determine if any predicted concentrations at any receptor locations would be “significant.” If the predicted Significance Analysis impacts for a particular pollutant are below the applicable SIL(s), then no further analyses are required for that pollutant. If the Significance Analysis reveals that modeled concentrations for a particular pollutant and averaging period are greater than the applicable SIL, a full impact analysis (e.g., NAAQS and PSD Increment Analysis) is performed at the significant receptors. Full impact analyses consider emissions from existing regional sources in addition to the Project. In cases where a potential NAAQS violation is identified, a source is not considered to have caused or contributed to the violation if its own impact from the modeling significance analysis is not significant (e.g., modeled impact is less than the SIL) at the violating receptor at the time of the predicted violation. If no simultaneous

exceedance of the SIL and the NAAQS is found in this process, the modeling analysis demonstrates that the proposed LNG Terminal would not cause or contribute to the potential NAAQS exceedance.

4.11.1.7 Significance Modeling Results

Table 4.11.1-8 presents the initial AERMOD modeling results for the Project sources only. As noted in section 4.11.1.2, the Project did not require an air dispersion modeling demonstration for Pb, because the Project emissions would not exceed the SER thresholds for that pollutant. O₃ was addressed using EPA-approved methodology that does not require air dispersion modeling. As required by LDEQ, Commonwealth used the modeled emission rates for [O₃] precursors (MERPs) Tier 1 demonstration tool to evaluate project source impacts for PSD permitting purposes. Using the MERPs and the modeling results of the most representative hypothetical source, Commonwealth performed a screening analysis of the O₃ precursors. The resulting emissions were added to the O₃ background concentration. The total emissions were compared to, and found to be below the NAAQS, thus demonstrating compliance.

The maximum modeled impacts from Commonwealth's sources showed 1-hour and annual NO₂, 1-hour SO₂, and 24-hour PM_{2.5} that exceeded the SIL, therefore, a full impact analysis was performed for those air pollutants and averaging periods to assess compliance with the applicable NAAQS and PSD increments. For all other pollutants and averaging periods presented, the maximum modeled impacts were below the SIL, so compliance was demonstrated with the NAAQS and PSD Increments and no further analyses are required for those air pollutants and averaging periods.

In addition to the modeling required by the LDEQ, FERC performed additional modeling to analyze the impact of the mobile LNG carrier and support vessel emissions in order to fully assess the impacts of the LNG Terminal operations. The modeling results summarized in table 4.11.1-9 below include LNG carriers and support vessels in addition to the LNG Terminal stationary sources. FERC maintained the assumptions used in Commonwealth's original modeling with respect to background concentrations and NO_x to NO₂ conversion methodology.⁹⁰ Marine sources were assumed to have an elevation of zero meters based on the elevation of the adjacent building. Cumulative modeling for 1-hour NO₂ used the receptor grid developed from 1-hour NO₂ SIL modeling. Cumulative modeling was not performed for annual NO₂, 1-hour SO₂, or 24-hour PM_{2.5} as the SIL results that included marine sources were nearly identical to the modeling performed by Commonwealth without mobile sources.

90 See appendix C of Accession No. 20210604-5170.

TABLE 4.11.1-8

AERMOD Significance Modeling Results for Commonwealth LNG Stationary Sources

| Pollutant | Averaging Time | SIL ($\mu\text{g}/\text{m}^3$) | Maximum Modeled Impact ($\mu\text{g}/\text{m}^3$) | Distance from Terminal of Maximum Impact Location (km) | Full Impact Analysis Necessary |
|-----------------------------|-------------------|----------------------------------|---|--|--------------------------------|
| NO ₂ | 1-hour <u>a/</u> | 7.5 | 37.7 | 1.9 | Yes |
| | Annual | 1.0 | 3.02 | 0.004 | Yes |
| SO ₂ | 1-hour <u>a/</u> | 7.8 | 11.0 | 0.01 | Yes |
| | 3-Hour | 25.0 | 10.4 | 0.01 | No |
| | 24-Hour | 5.0 | 2.70 | 0.3 | No |
| | Annual | 1.0 | 0.14 | 0.2 | No |
| CO | 1-Hour | 2,000 | 449 | 1.1 | No |
| | 8-Hour | 500 | 280 | 0.004 | No |
| PM ₁₀ | 24-Hour | 5.0 | 2.76 | 0.3 | No |
| | Annual | 1.0 | 0.188 | 0.3 | No |
| PM _{2.5} <u>b/</u> | 24-Hour <u>c/</u> | 1.2 | 2.61 | 0.4 | Yes |
| | Annual | 0.2 | 0.169 | 0.3 | No |

a/ Maximum daily H1H averaged over 5 yearsb/ Secondary formation impacts addedc/ Averaged over 5 years

NOTE: Bold Values = greater than SIL

TABLE 4.11.1-9

AERMOD Significance Modeling Results for Commonwealth LNG Stationary and Mobile Sources

| Pollutant | Averaging Time | SIL ($\mu\text{g}/\text{m}^3$) | Maximum Modeled Impact ($\mu\text{g}/\text{m}^3$) | SIL Distance (km) | Distance from Terminal of Maximum Impact Location (km) |
|-----------------------------|-------------------|----------------------------------|---|-------------------|--|
| NO ₂ | 1-hour <u>a/</u> | 7.5 | 124.53 | 54 | 0.5 |
| | Annual | 1.0 | 4.44 | 1.4 | 0.5 |
| SO ₂ | 1-hour <u>a/</u> | 7.8 | 11.0 | 0.8 | 0.5 |
| | 3-Hour | 25.0 | 10.4 | N/A | 0.5 |
| | 24-Hour | 5.0 | 2.70 | N/A | 0.6 |
| | Annual | 1.0 | 0.14 | N/A | 0.8 |
| CO | 1-Hour | 2,000 | 451.5 | N/A | 0.5 |
| | 8-Hour | 500 | 279.84 | N/A | 0.5 |
| PM ₁₀ | 24-Hour | 5.0 | 2.76 | N/A | 0.8 |
| | Annual | 1.0 | 0.21 | N/A | 0.8 |
| PM _{2.5} <u>b/</u> | 24-Hour <u>c/</u> | 1.2 | 2.47 | 2.9 | 0.9 |
| | Annual | 0.2 | 0.18 | N/A | 0.8 |

a/ Maximum daily H1H averaged over 5 years

Note: Bold Values = greater than SIL

b/ Secondary formation impacts addedc/ Averaged over 5 years

Table 4.11.1-9 indicates that concentrations of 1-hr and annual NO₂, 1-hr SO₂, and 24-hr PM_{2.5} due to stationary and mobile sources at the LNG Terminal would exceed the respective SIL. With the exception of 1-hr NO₂, all remaining pollutants with maximum modeled concentrations that exceeded the SIL resulted in concentrations nearly equivalent to those in the stationary source-only modeling required by the state. Therefore, additional modeling was not completed for those pollutants as the results are expected to be similar to the NAAQS modeling results reviewed below. Additional modeling was performed for 1-hr NO₂ impacts due to LNG Terminal stationary and mobile sources and is reviewed further below.

NAAQS Analysis Results

Commonwealth performed a modeling analysis for each Project pollutant that exceeded the SIL in table 4.11.1-8. Commonwealth's pollutant sources were modeled along with additional (background) sources from off-site inventory (obtained from LDEQ's Emissions and Inventory Reporting Center) within the pollutant-specific area of impact and averaged over five years to determine source contribution in comparison with the NAAQS. The area of impact was established as the distance from the Project to the farthest receptor that showed a modeled impact greater than the SIL in the significance modeling analysis. The background sources inventory included all sources within the area of impact plus 15 km and all major sources, including the Venture Global Calcasieu Pass LNG project, within the area of impact plus 20 km (in either case the area of impact would not extend beyond a 50 km by 50 km grid from the LNG Terminal due to the accuracy constraints of dispersion models).⁹¹ Table 4.11.1-10 provides the Project sources maximum modeled design concentration, plus background values, in comparison to the NAAQS values for the respective Project pollutant and averaging period.

91 Note that due to the 50 by 50 km square receptor grid, some receptors near the corners may be more than 50 km from the LNG Terminal

TABLE 4.11.1-10

Summary of National Ambient Air Quality Standards Analysis for LNG Terminal Stationary Sources

| Pollutant / Period | Area of Impact (major background sources) Distance (km) | Modeled Maximum Impact Plus Background Sources (ug/m ³) ^{a/} | Project Contribution to Maximum Impact Concentration (ug/m ³) | Project Contribution to Maximum Impact Concentration (percentage) | Non-Project Contribution to Maximum Impact Concentration (ug/m ³) ^{b/} | Background Concentration (ug/m ³) ^{c/} | NAAQS (ug/m ³) | Distance from the Project Location (km) | NAAQS Exceedance? (Yes/No) |
|---------------------------|---|---|---|---|---|---|----------------------------|---|----------------------------|
| NO ₂ 1-Hour | 50.0 | 229 | 0.00043 | 0.0002 | 182 | 46.7 | 188 | 13.2 | Yes |
| NO ₂ Annual | 20.3 | 11 | 3.01 | 27.4 | 1.35 | 6.6 | 100 | 0.3 | No |
| SO ₂ 1-Hour | 20.8 | 65 | 6.69 | 10.3 | 1.44 | 57.1 | 196 | 0.5 | No |
| PM _{2.5} 24-Hour | 23.0 | 22 | 1.99 | 9.0 | 0.04 | 19.8 | 35 | 0.6 | No |

^{a/} Modeled maximum impact of the 8th highest high^{b/} Non-Project Contributors are non-Commonwealth point-source facilities that emit air pollutants; an inventory of these pollutant sources is included in the LDEQ Emission Inventory Survey (LDEQ, 2006).^{c/} Background concentrations are the ambient atmospheric values of pollutants (adjusted to account for the presence of surrounding industry, as applicable); background pollutant concentrations are recorded by LDEQ at ambient monitoring sites throughout Louisiana; ambient monitoring data are also available from the EPA (LDEQ, 2006).

TABLE 4.11.1-11

Summary of National Ambient Air Quality Standards Analysis for LNG Stationary and Mobile Sources

| Pollutant / Period | Area of Impact (major background sources) Distance (km) | Modeled Maximum Impact Plus Background Sources (ug/m ³) ^{a/} | Project Contribution to Maximum Impact Concentration (ug/m ³) | Project Contribution to Maximum Impact Concentration (percentage) | Non-Project Contribution to Maximum Impact Concentration (ug/m ³) ^{b/} | Background Concentration (ug/m ³) ^{c/} | NAAQS (ug/m ³) | Distance from the Project Location (km) | NAAQS Exceedance? (Yes/No) |
|------------------------|---|---|---|---|---|---|----------------------------|---|----------------------------|
| NO ₂ 1-Hour | 50.0 | 307 | 0.0055 | 0.0018 | 260.97 | 46.7 | 188 | 3.1 | Yes |

^{a/} Modeled maximum impact of the 8th highest high^{b/} Non-Project Contributors are non-Commonwealth point-source facilities that emit air pollutants; an inventory of these pollutant sources is included in the LDEQ Emission Inventory Survey (LDEQ, 2006).^{c/} Background concentrations are the ambient atmospheric values of pollutants (adjusted to account for the presence of surrounding industry, as applicable); background pollutant concentrations are recorded by LDEQ at ambient monitoring sites throughout Louisiana; ambient monitoring data are also available from the EPA (LDEQ, 2006).

As indicated in table 4.11.1-10, the results of the modeled maximum impact plus background stationary sources for 1-hour NO₂ (229 micrograms per meter cubed [$\mu\text{g}/\text{m}^3$]) also exceeded the NAAQS of 188 $\mu\text{g}/\text{m}^3$. None of the other three pollutants exceeded the respective NAAQS concentration. In addition, FERC conducted an additional analysis inclusive of the LNG carriers and tugs, as summarized in table 4.11.1-11.

Commonwealth conducted a source contribution analysis to determine whether the Project would contribute significantly to the modeled NAAQS exceedance. Appendix H provides predicted modeled maximum impact (for stationary sources only and stationary sources plus LNG carriers and tugs) plus background sources concentrations for all locations within 50 km of the Project site that exceeded the NAAQS for 1-hour NO₂. Appendix I includes maps of the Project vicinity and the locations where the NAAQS would be exceeded. The proportions of the exceedance concentrations attributable to the project are very small. In the instance of the highest overall modeled maximum impact for stationary sources plus background sources concentration (229 $\mu\text{g}/\text{m}^3$), the Project-only concentration contribution (0.0004 $\mu\text{g}/\text{m}^3$) is well below the SIL concentration for 1-hour NO₂ (7.5 $\mu\text{g}/\text{m}^3$). Similarly, in the instance of the highest overall modeled maximum impact for LNG stationary sources and LNG carriers and tugs, plus background sources concentration (308 $\mu\text{g}/\text{m}^3$), the Project-only (inclusive of LNG carriers and tugs) concentration contribution (0.005 $\mu\text{g}/\text{m}^3$) is well below the SIL concentration for 1-hour NO₂ (7.5 $\mu\text{g}/\text{m}^3$). The Project-only (LNG stationary sources) and Project-only plus LNG carriers and tugs concentration contributions at the NAAQS-exceedance locations in which the Project's contribution is the highest of the total modeled maximum impact plus background sources concentration (0.43 $\mu\text{g}/\text{m}^3$ and 2.8 $\mu\text{g}/\text{m}^3$, respectively) are both well below the SIL concentration for 1-hour NO₂. In fact, the exceedances would still be predicted in the absence of the Project (i.e., the existing background emissions sources from LDEQ's Emissions and Inventory Reporting Center are driving the NAAQS exceedances). This modeling analysis demonstrates that the proposed Project would have a minor contribution to the modeled maximum impact. Based on this small level of impact that does not exceed the SIL, we do not believe the Project would cause or contribute to the potential NAAQS exceedance.

PSD Increment Modeling

PSD increment is the amount pollution in an area is allowed to increase. PSD increments prevent the air quality in clean areas from deteriorating to the level set by the NAAQS. PSD Class II increment standards apply to the Project. PSD increments for four pollutants have been established for the Class II standards: annual NO₂; annual, 24-hour, and 3-hour SO₂; annual and 24-hour PM₁₀; and annual and 24-hour PM_{2.5}. Commonwealth conducted modeling analyses to assess whether the Project could demonstrate compliance with the PSD Increments for the corresponding Project pollutants that exceeded the SIL: annual NO₂ and 24-hour PM_{2.5}. Commonwealth used the same background sources inventory for the PSD incremental modeling as was used for the NAAQS analysis. As shown in table 4.11.1-12, the maximum modeled increment concentrations for both pollutants were well below the established PSD increment.

TABLE 4.11.1-12

PSD Increment Modeling Results for Commonwealth LNG

| Pollutant | Averaging Time | PSD Increment Concentration ($\mu\text{g}/\text{m}^3$) | Maximum Modeled Increment Concentration of the Commonwealth LNG Project ($\mu\text{g}/\text{m}^3$) |
|-------------------|----------------|--|--|
| NO ₂ | Annual | 25 | 4.4 |
| PM _{2.5} | 24-Hour | 9 | 3.4 |

4.11.1.8 Air Quality Conclusions

The dispersion modeling analyses, and additional impact analyses performed demonstrated compliance with all ambient air quality standards applicable to Commonwealth LNG. The analyses showed that operation of the facility would not cause or make a significant contribution to any violation of either the NAAQS or the existing PSD increments. Although Project operation would be in compliance with the NAAQS and the NAAQS are designated to protect sensitive populations, we acknowledge that NAAQS attainment alone may not assure there is no localized harm to such populations due to project emissions of VOCs, HAPs, or issues such as the presence of non-Project related pollution sources, local health risk factors, disease prevalence, and access (or lack thereof) to adequate care. Project dispersion modeling analysis, summarized above, conclude operational emissions from the Project are not significant.

We received comments during the public comment period for the draft EIS stating FERC had not taken a hard look at the local air quality impacts of the Project. However, the dispersion modeling analysis conducted as part of the Project, coupled with source culpability analyses, constitutes an in-depth review of local air quality impacts. While modeling predicts potential exceedances of the NAAQS, the project contributions to the potential exceedances are negligible. The EPA, in conjunction with LDEQ, works to identify and remedy ambient air quality concerns through State Implementation Plans. The output of the dispersion modeling analysis and the LDEQ's permitting of emissions for the Project conclude operational emissions from the Project are not significant. We concur. The detailed analyses and results reflected in the information provided in this section are contained in Commonwealth's *Class II Modeling Report in Support of Part 70 (Title V) Operating Permit and Prevention of Significant Deterioration Permit*.⁹³

In addition to assessing whether the Project would demonstrate compliance with air quality standards, we also assessed the potential effects the Project could have on environmental justice communities. Appendix I provides figures from Commonwealth's modeling illustrating the concentration plumes, showing the full range of concentrations for all criteria pollutants that have maximum modeled concentrations that exceeded the SIL and NAAQS, in relation to environmental justice populations by block group. The potential impacts of Project air emissions on environmental justice communities are discussed in section 4.9.12.

4.11.2 Noise

Noise would affect the local environment during both construction and operation of the Project facilities. At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of the day and throughout the week. This variation is caused in part by changing weather

⁹³ Commonwealth's Class II Modeling Report in Support of Part 70 (Title V) Operating Permit and Prevention of Significant Deterioration Permit can be viewed on eLibrary under Accession Number 20210817-5051.

- control systems, including monitoring systems and process alarms, remotely operated control and isolation valves, and operating procedures to ensure that the facility stays within the established operating and design limits;
- safety instrumented prevention systems, such as safety control valves and emergency shutdown systems, to prevent a release if operating and design limits are exceeded;
- physical protection systems, such as appropriate electrical area classification, proper equipment and building spacing, pressure relief valves, spill containment, and cryogenic, overpressure, and fire structural protection, to prevent escalation to a more severe event;
- site security measures for controlling access to the plant, including security inspections and patrols, response procedures to any breach of security, and liaison with local law enforcement officials; and
- onsite and offsite emergency response, including hazard detection and control equipment, firewater systems, and coordination with local, state, and federal emergency management officials and first responders, to mitigate the consequences of a release and prevent it from escalating to an event that could impact the public.

The inclusion of such protection systems or safeguards in a plant design can minimize the potential for an initiating event to develop into an incident that could impact the safety of the offsite public. The review of the engineering design for these layers of protection are initiated in the application process and carried through to the next phase of the proposed project in final design if authorization is granted by the Commission.

The reliability of these layers of protection is informed by occurrence and likelihood of root causes and the potential severity of consequences based on past incidents and validated hazard modeling. As a result of the continuous engineering review, we recommend mitigation measures and continuous oversight to the Commission for consideration to include as conditions in the order. If a facility is authorized and recommendations are adopted as conditions to the order, FERC staff would continue its engineering review through final design, construction, commissioning, and operation.

Process Design

Commonwealth provided a narrative description and engineering information on the process design as part of its application consistent with FERC, Guidance Manual for Environmental Report Preparation for Applications filed under the Natural Gas Act, Volume II, Liquefied Natural Gas Project Resource Reports 11 & 13 Supplemental Guidance, 2017. The process engineering information includes narrative descriptions of each major system of the LNG facilities and process design information, including, but not limited to: basis of design and design philosophies, process flow diagrams (PFDs), Heat and Material Balances (HMBs), piping and instrumentation drawings (P&IDs), and equipment lists and datasheets. This engineering design information in the 2017 Guidance Manual and application are consistent with the engineering design defined in NFPA 59A (2019) 3.3.9 and examples of such listed in NFPA 59A (2019) Annex A.3.3.9.

Title 49 CFR 193 and 33 CFR 127 have relatively minimal to no requirements on the process design. Title 49 CFR §193.2703, under Subpart H, does require that persons used for the design have demonstrated competence by training or experience in the design of comparable components and similar designer competence requirements in NFPA 59A (2001 and thereafter) and there are some other general requirements for material compatibility, isolation valves, shutdown valves, emergency shutdown, and pressure relief valves, which we will describe in applicable descriptions of each major process system; however, there is minimal to no specific requirements on the process design necessary to reliably and safely operate the LNG facilities. For example, in order to liquefy natural gas, most liquefaction technologies require that the feed gas stream be pre-treated to remove components that could freeze out and clog the

liquefaction equipment or would otherwise be incompatible with the liquefaction process or equipment, including mercury, H₂S, CO₂, water, and heavy hydrocarbons. If water and carbon dioxide are not removed to certain concentrations the downstream plate heat exchangers could clog and over-pressurize leading to a catastrophic failure of equipment or if mercury is not limited to certain concentrations it can induce embrittlement and corrosion of downstream brazed aluminum heat exchangers resulting in a catastrophic failure of equipment. However, there are no requirements that water, carbon dioxide, or mercury be removed and applications have not always included these features. Therefore, FERC engineering staff evaluated the FEED process design information to better ensure that the LNG facilities would reliably and safely operate. As part of the process design review, FERC staff also evaluated the piping and instrumentation (P&ID) drawings to verify equipment operating and design conditions consistent with the PFDs and HMBs and that adequate process monitoring, controls, and shutdowns are in place consistent with the operating and design conditions and that their reliability or redundancy is commensurate with potential consequences of failure. However, the FEED P&IDs are subject to have changes in final design after additional details and engineering is conducted. Therefore, we recommend in section 4.12.1.6 that Commonwealth provide updated P&IDs reflective of the final design. In addition, the margins between operating and design conditions would not be finalized until final design and many of the instrumentation and control set points would not be determined until final design. Therefore, we recommend in section 4.12.1.6 that Commonwealth file the safe operating limits (upper and lower), alarm and shutdown set points for all instrumentation (e.g., temperature, pressures, flows, and compositions). Below we discuss each major system in the proposed LNG export terminal and specific requirements and recommendations applicable to those major systems based upon our process design review. DOT PHMSA and USCG would be responsible for enforcing any of the applicable minimum federal requirements in their respective regulations that would be applicable.

The inlet feed gas would first pass through an insulating kit, followed by a high integrity pressure protection system (HIPPS). A HIPPS often is specified downstream of the feed gas pressure control and consists of three or more pressure monitors and indicators that commonly would automatically shutdown the feed gas flow in the event two or more pressure monitors exceed the design pressure of downstream equipment. HIPPS (or other systems) are specified to prevent over-pressurization of downstream equipment. FERC staff noted the feed gas coalescer design pressure and associated PSV set pressures would match the HIPPS specified pressure. However, the equipment downstream of the HIPPS and Feed Gas Coalescer would have a lower design pressure than the HIPPS set point. As a result, the HIPPS would not protect downstream equipment from upsets in the pipeline which result in pressures to the process higher than the design pressures but lower than the HIPPS set pressure. Therefore, we recommend in section 4.12.1.6 that Commonwealth ensure that all piping, equipment, and PSVs between the HIPPS and the downstream pressure regulators have designs and set pressures that are equal to the HIPPS specified pressure, or that Commonwealth provide justification for why these designs and set pressures are different from the HIPPS specified pressure.

The inlet feed gas would be conditioned to remove solids and water droplets in a coalescer prior to entering feed gas pretreatment processes. Some inlet gas would be taken off as supplemental fuel gas for use in start-up operations, fuel gas, and gas turbines. Once the inlet gas is conditioned, the feed gas would enter the mercury removal system to reduce the mercury concentration in the feed gas. As aforementioned, mercury removal is often specified to prevent mercury embrittlement and corrosion of downstream brazed aluminum heat exchangers.

After mercury removal, the feed gas would contact an amine-based solvent solution in the acid gas absorber column to remove the H₂S and CO₂ (i.e., acid gas) present in the feed gas, which, as mentioned, is designed to prevent freezing in the liquefaction process that can lead to lesser performance, more frequent deriming (thawing and disposal of frozen components of the feed gas), or clogging of the downstream heat exchangers that if not derimed can lead to failure from over-pressurization. Acid gas can also increase

corrosion rates in certain common materials of construction, depending on pressure and concentration, such as carbon steel, used to handle the relatively warmer natural gas prior to the refrigeration and liquefaction of the natural gas. Once the acid gas components accumulate in the amine solution, the acid gas rich amine solution would be routed to an amine regenerator column that utilizes a reboiler. Contact with the reboiler discharge would regenerate the acid gas rich amine solution back to an acid gas lean amine solution by using heat to release the acid gas. The regenerated amine solution would be recycled back to the acid gas absorber column and the removed acid gas would be sent through a sulfur removal unit to remove H₂S. FERC staff noted that the design includes a swan neck upstream of the acid gas removal column to prevent backflow. Commonwealth indicated that the swan neck was intended to prevent liquid backflow, and that the calculated liquid inventory determined the height of the swan neck. However, Commonwealth did not provide documentation supporting the design basis of the swan neck. Therefore, we recommend in section 4.12.1.6 that Commonwealth provide a check valve upstream of the acid gas removal column or provide a dynamic simulation that demonstrates that the swan neck would be sufficient for preventing backflow.

The acid gas stream would then be routed to thermal oxidizers, where CO₂, trace amounts of H₂S not removed in the sulfur removal unit, and trace amounts of hydrocarbons would be incinerated. A thermal oxidizer is commonly specified downstream of a sulfur removal unit to further reduce emissions and decrease hazard footprints over just venting the acid gas stream. In the event the thermal oxidizers are not available, the acid gas would be disposed of through the wet flare. The feed gas exiting the acid gas absorber column would be cooled, and then sent to a separator where bulk water would be recovered and recycled back to the acid gas absorber column. After the separator, any remaining water in the feed gas would be removed using regenerative molecular sieve beds. During the molecular sieve bed regeneration process, heated regeneration gas would release water from the molecular sieve beds. The three molecular sieve beds would operate in staggered adsorption and regeneration, such that the overall process would be continuous. Water collected during the molecular sieve regeneration process would be routed back to the acid gas absorber column.

After water removal, the treated gas would flow to the natural gas liquids (NGL) extraction unit. Heavier hydrocarbons are removed to prevent freezing of the heavier hydrocarbons in the liquefaction process that can lead to lesser performance, more frequent deriming, or clogging of the downstream heat exchangers that if not derimed can lead to failure from over-pressurization. The NGL extraction unit would consist of a main cold box, a low temperature separator, and a demethanizer column with an overhead heat exchanger and a reboiler. First, the dry feed gas stream would be cooled in the main cold box, then sent to a low temperature separator where the feed gas would be separated from NGLs. The NGL stream exiting the low temperature separator would enter the demethanizer column near the middle. The demethanizer liquid bottoms would be sent to the debutanizer column. The debutanizer column and reflux accumulator vessel would separate the entering liquid stream into three streams: propane-rich fuel gas, which would be sent to a fuel gas scrubber; NGLs, which would be recycled to the main cold box; and hydrocarbon condensate, which would be sent to a storage tank for truck loading. The flashed feed gas stream exiting the low temperature separator would enter the demethanizer column near the top. The purified gas would exit the top of the demethanizer column, where it would be used to cool upstream feed gas and would then be sent to the liquefaction unit.

The liquefaction unit would consist of three heat exchanger bundles: warm, middle, and cold. The gas from the demethanizer column would enter the warm bundle first and would be progressively cooled and liquefied as it passed to the middle and the cold bundles. The LNG exiting the cold bundle would be sent to six full containment LNG storage tanks.

In order to achieve the cryogenic temperatures needed to liquefy the natural gas stream in the above process, the gas would be cooled by a thermal exchange process driven by a closed loop refrigeration system using a single mixed refrigerant (MR). The single mixed refrigerant would be comprised of a mixture of nitrogen, methane, ethylene, propane, and isopentane. Methane would be provided from the treated dry

lines indicates the risk is low for an incident at any given location. The operation of the Pipeline would represent a slight increase in risk to the nearby public.

Commonwealth has identified it would use a limited 3.5-foot-wide permanent right-of-way for operation of the pipeline, which would accommodate little more than the width of the pipeline (i.e., the diameter of a 42-inch pipeline). However, this width would not appear to allow sufficient space for the full outer diameter of the pipeline, including the concrete coating, or for maintenance, or repairs of the pipeline. In the draft EIS we recommended that Commonwealth file a plan clarifying how it would adequately protect, inspect, maintain, operate, and repair the pipeline in accordance with PHMSA's requirements in 49 CFR 192 using the proposed 3.5-foot-wide right-of-way, or provide an alternate permanent pipeline right-of-way width to accommodate the operational needs of the pipeline.

Commonwealth filed a response stating it would develop and implement a Pipeline Operations and Maintenance program in accordance with 49 CFR 192 requirements that would serve as the basis for safe operation of the Pipeline, and Commonwealth would monitor and operate the Pipeline using a 24 hour per day pipeline controller position in accordance with 49 CFR 192 requirements. Commonwealth would execute a permanent right-of-way easement with all landowners of parcels that would be traversed by the Pipeline for the 3.5-foot-wide right-of-way. This permanent easement would include the right to access the right-of-way for activities necessary to protect, inspect, maintain, operate, and repair the Pipeline in accordance with 49 CFR 192 for the duration of Pipeline operation. The easement would further allow Commonwealth to use airboats, low-ground-pressure vehicles, or timber equipment mats, as needed. If additional workspace or access were to be required for an activity, Commonwealth would have the right to negotiate appropriate compensation to the landowners to secure the necessary additional workspace or access for the duration of the activity and to subsequently monitor the workspace to ensure successful restoration and revegetation. We conclude this approach would allow Commonwealth to safely operate and maintain the Pipeline.

4.13 CUMULATIVE IMPACTS

In accordance with NEPA, we considered the cumulative impacts of the Project with other projects or actions within the geographic and temporal scope of the Project. As defined by CEQ, a cumulative effect is the impact on the environment that results from the incremental effects of the proposed action when added to other past, present, and reasonably foreseeable actions, regardless of what agency or person undertakes such actions.

This cumulative impacts analysis uses an approach consistent with the methodology set forth in relevant guidance (CEQ, 1997, 2005; EPA, 1999). Under these guidelines, inclusion of actions within the analysis is based on identifying commonalities between the impacts that would result from the Project and the impacts likely to be associated with other potential projects.

The purpose of this analysis is to identify and describe cumulative impacts that would potentially result from construction and operation of the Project. To avoid unnecessary discussions of insignificant impacts and projects and to adequately address and accomplish the purposes of this analysis, an action must first meet the following three criteria to be included in the cumulative analysis:

- impact a resource potentially affected by the proposed Project;
- impact that resource within all, or part of, the geographic scope of the Project. The geographical area considered varies depending on the resource being discussed, which is the general area in which the Project could contribute to cumulative impacts on that particular resource; and
- impact that resource within all, or part of, the time span for the potential impact from the proposed Project.

The regional landscape in the Project area has been significantly altered since the latter part of the nineteenth century, initially by agriculture and later by the development of industrial complexes, oil and gas support facilities, port facilities, residential and commercial centers, and attendant public infrastructure (schools, hospitals, roads, etc.). These developments, along with associated upgrades to flood protection and drainage systems (levees, ditches, pumping stations, etc.), have had a permanent impact on the regional landscape. Consistent with CEQ guidelines (2005), we have aggregated past actions that helped shape the current environment into our discussion of the affected environment in section 4.0. Thus, we discuss present and reasonably foreseeable actions in this section.

To understand the contribution of past actions to the cumulative effects of the proposed action, this analysis relies on current environmental conditions as a proxy for the effects of past actions. Existing conditions reflect the aggregate effects of all prior human actions and natural events that have affected the environment and might contribute to cumulative effects. In this analysis, we generally consider the effects of past projects within the resource-specific geographic scopes as part of the affected environment (environmental baseline), which was described previously. However, this analysis does consider, as applicable, the present effects of past actions. In accordance with the CEQ regulations and guidance¹⁶⁰, we identified actions near Commonwealth and evaluated the potential for a cumulative impact on the environment. This analysis evaluates other actions that affect resources also affected by the Project, within the resource-specific geographic scopes described below. Actions outside the geographic scopes are generally not evaluated because their potential to contribute to a cumulative impact diminishes with increasing distance from the projects.

Several present and reasonably foreseeable actions with impacts during the Project's temporal extent would commence construction or operation during the Project's three-year construction period. Commonwealth anticipates beginning construction in the second quarter of 2023 and initiating commercial operation by the second quarter of 2026 (assuming receipt of all required certifications, authorizations, and permits). Commonwealth anticipates construction and commissioning of the Terminal to be completed in approximately 36 to 38 months. Commonwealth proposes a 12-month construction schedule for the Pipeline, which would occur concurrent with construction of the Terminal. Commonwealth would initiate construction of the Pipeline in the first quarter of 2024 and expect to complete it during the first quarter of 2025. We received comments stating that given the length of long-term leases, the operational life of the Project would be 50 years. However, Commonwealth proposes that the Project would have an operational life of 30 years. Although Commonwealth holds lease options for a total of 50 years, Commonwealth has not entered into any agreements for service for a period of time longer than 30 years. Commonwealth has not identified any plans for future expansion or abandonment. Any plans for expansion or abandonment would require the appropriate authorization from the FERC (e.g., environmental analyses, abandonment regulations) and other federal, state, and local agencies at that time. A facility lifespan beyond 30 years is not reasonably foreseeable. Additionally, as noted in the introductory text of section 4.0, this EIS assesses impacts in the context of temporary, short-term, long-term, and permanent impacts. Temporary impacts are those that generally would not last beyond the duration of construction; short-term impacts are those that are likely to continue for up to 3 years following construction; long-term impacts are those that would continue for longer than three years but would return to pre-existing conditions within the life of the Project; and permanent impacts are those that would not return to pre-existing conditions within the life of the Project. The assessments of these impacts would not change with a longer project lifespan. In fact, the assessments of long-term and permanent impacts could be considered conservative if the Project lifespan was to extend beyond 30 years.

160 On July 16, 2020, CEQ issued a final rule, Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act (Final Rule, 85 Fed. Reg. 43,304), which was effective as of September 14, 2020; however, the NEPA review of this project was in process at that time and was prepared pursuant to the 1978 regulations.

Actions with resource impacts within the same geographic scope as the Project would occur within a prescribed distance from the Project, uniquely defined based on the characteristics of the resource and how far the Project's effects might extend. Geographic scope defines how far out from the Project a cumulative impact could occur. Table 4.13-1 provides the geographic scope for each resource and the reasoning behind its establishment.

TABLE 4.13-1

Geographic Scope for Cumulative Impact Analysis

| Resources and Affected Communities | Geographic Scope | Justification for Geographic Scope |
|--|--|--|
| Geologic Resources and Soils | Construction workspaces and the Calcasieu Ship Channel from the Gulf to Commonwealth | Impacts on soils and surficial geology would be highly localized and not expected to extend beyond the area of direct disturbance associated with the Project. Cumulative impacts to riverbanks/shorelines would only occur in areas where Commonwealth LNG carriers operate. |
| Water Resources (Groundwater, Surface Water, and Wetlands) | Hydrological unit code "HUC"-12 sub-watersheds | Impacts on groundwater and surface water resources could reasonably extend throughout a HUC-12 sub-watersheds (i.e., a detailed hydrologic unit that can accept surface water directly from upstream drainage areas, and indirectly from associated surface areas such as remnant, noncontributing, and diversions to form a drainage area with single or multiple outlet points [NRCS, 2007]), as could the related impacts on aquatic resources and fisheries. |
| Vegetation and Wildlife | HUC-12 sub-watersheds | Consideration of impacts within a HUC-12 sub-watershed sufficiently accounts for impacts on vegetation and wildlife that would be directly affected by construction activities and for indirect impacts such as changes in habitat availability and displacement of transient species. |
| Aquatic Resources | HUC-12 sub-watersheds | Consideration of impacts within a HUC-12 sub-watershed sufficiently accounts for impacts on aquatic resources within waterbodies that would be directly affected by construction activities and for indirect impacts such as changes in habitat availability and displacement of transient species. |
| Threatened and Endangered Species | HUC-12 sub-watersheds | HUC-12 subwatershed – impacts within the HUC-12 subwatershed could contribute to impacts on vegetation communities and threatened and endangered species habitat within the watershed. For marine species, impacts on marine/estuarine waterbodies in the HUC-12 sub-watersheds and established shipping channels used by LNG carriers are also within the geographic scope. |
| Land Use and Recreation | 1 mile radius | Impacts on general land uses would be restricted to the construction workspaces and the immediate surrounding vicinity; therefore, the geographic scope for land use and recreation is 1.0 mile from the Terminal and Pipeline. |

TABLE 4.13-1

Geographic Scope for Cumulative Impact Analysis

| Resources and Affected Communities | Geographic Scope | Justification for Geographic Scope |
|---|--|--|
| Visual Resources | For aboveground facilities, distance that the tallest feature at the planned facility would be visible from neighboring communities. For the Pipeline System, a 0.25-mile buffer and existing visual access points (e.g., road crossings). | Assessing the impact based on the viewshed allows for the impact to be considered with any other feature that could have an effect on visual resources. |
| Socioeconomics | Parishes where project activities are proposed. | The geographic scope of potential impact for socioeconomic was considered to include Cameron Parish and Calcasieu Parish where Commonwealth would construct the Project. |
| Environmental Justice | Affected environmental justice block groups. | The geographic scope of potential impacts for environmental justice includes all environmental justice block groups affected by the Project. |
| Cultural Resources | Area of Potential Effect of the proposed Project | Overlapping effects within the Area of Potential Effect could contribute to cumulative impacts. |
| Air Quality – Construction | Within 0.25 mile of the proposed pipeline facilities and within 1.0 mile of the Terminal | Air emissions during construction would be limited to vehicle and construction equipment emissions and dust and would be localized to the project construction sites. |
| Air Quality – Operations | Within 50 kilometers (31.1 miles) of the proposed Terminal | The distance used by the EPA for cumulative modeling of large PSD sources during permitting (40 CFR 51, appendix W) which is a 50-kilometer (31.1 mile) radius. Impacts on air quality beyond this would be de minimis. |
| Noise - Construction | General construction activities: within 0.25 mile from pipeline or aboveground facilities, 0.5 mile from HDD entry and exit locations; underwater noise due to pile driving: up to 3 miles, as determined by NMFS (2021) | Areas in the immediate proximity of pipeline or aboveground facility construction activities (within 0.25 mile) would have the potential to be affected by construction noise. NSAs within 0.5 mile of an HDD, direct pipe installation, or pile driving could be cumulatively affected if other projects had a concurrent impact on the NSA. Aquatic life could be cumulatively affected if other projects conduct pile driving within 3 miles of the Project |
| Noise - Operations | NSAs within 1 mile of a noise-emitting permanent aboveground facility | Noise from the Project's permanent facilities could result in cumulative noise impacts on NSAs within 1 mile. |

As in sections 4.1 through 4.12, we use specific terms to describe the intensity and duration of cumulative impacts. The intensity of a cumulative impact could be temporary, short-term, long-term, and permanent. Temporary cumulative impacts generally occur during construction with the resource returning to preconstruction condition almost immediately afterward. Short-term cumulative impacts could continue for up to 3 years following construction. Cumulative impacts were considered long-term if the resource would require more than 3 years to recover. A permanent cumulative impact could occur as a result of any

activity that modifies a resource to the extent that it would not return to preconstruction conditions during the life of the Project.

4.13.1 Projects and Activities Considered

This analysis identified several different types of present, proposed, and permitted actions that could cause a cumulative impact when considered along with the Project. The actions were provided by Commonwealth and by a general literature review of publicly available sources including, but not limited to:

- FERC eLibrary;
- LDEQ;
- Louisiana Economic Development;
- COE Regulatory Public Notices;
- Southwest Louisiana Economic Development Alliance; and
- the Permitting Dashboard for Federal Infrastructure Projects.

Table 4.13-2 summarizes the actions that have the potential for cumulative impacts because of their location and timing. The actions are mapped on figure 4.13-1. Of the 44 total actions, not including the Project, there are:

- 11 FERC-jurisdictional LNG and pipeline projects;
- 4 energy projects;
- 8 industrial projects;
- 9 transportation, port, and road improvement projects
- 3 municipal, medical, and educational projects; and
- 18 commercial and residential projects.

| Number | Name | Number | Name | Number | Name |
|--------|--|--------|---|--------|--|
| 1 | Calcasieu Pass LNG Terminal and Trans Cameron Pipeline | 16 | Calcasieu Pass Slurry Line | 31 | Subdivision: Maple Creek |
| 2 | Cameron LNG Project | 17 | Calcasieu Ship Channel (USACE Port of Lake Charles) | 32 | Subdivision: Orleans Run |
| 3 | Cameron LNG Expansion Project | 18 | Advanced Refining Technologies | 33 | Subdivision: Wisteria Vine |
| 4 | Driftwood LNG Project | 19 | Lake Charles Methanol | 34 | Subdivision: Audubon Place |
| 5 | Lake Charles LNG | 20 | Indorama Ventures | 35 | Subdivision: Savannah Lakes |
| 6 | Magnolia LNG | 21 | Lotte Axial | 36 | Subdivision: Lakes at Morganfield |
| 7 | Delfin LNG | 22 | G2X Big Lake Fuels | 37 | Subdivision: Village at Morganfield |
| 8 | Sabine Pass Liquefaction Expansion Project | 23 | Port of Vinton | 38 | Subdivision: Cove at Morganfield |
| 9 | Port Arthur Pipeline Louisiana Connector | 24 | Port Louisiana (formerly Port Cameron) | 39 | Subdivision: Oak Grove |
| 10 | CP2 LNG and CP Express Project | 25 | West Calcasieu Port Projects | 40 | Subdivision: Beau Blanc |
| 11 | Cameron Access Project | 26 | I-10 Calcasieu River Bridge | 41 | Subdivision: Crest at Morganfield |
| 12 | Cameron LNG – Energy Transmission Line and Switchyard | 27 | LA-378 Adaptive Management | 42 | Subdivision: Highland Hills |
| 13 | Lake Charles LNG – Energy Transmission Line | 28 | Port Wonder | 43 | Graywood Subdivision |
| 14 | Magnolia LNG – Energy Transmission Line | 29 | Subdivision: Belle Savanne | 44 | Morganfield Subdivision |
| 15 | Bayou Bridge Pipeline | 30 | Subdivision: Carlyss Place | 45 | Hackberry Carbon Sequestration Project |

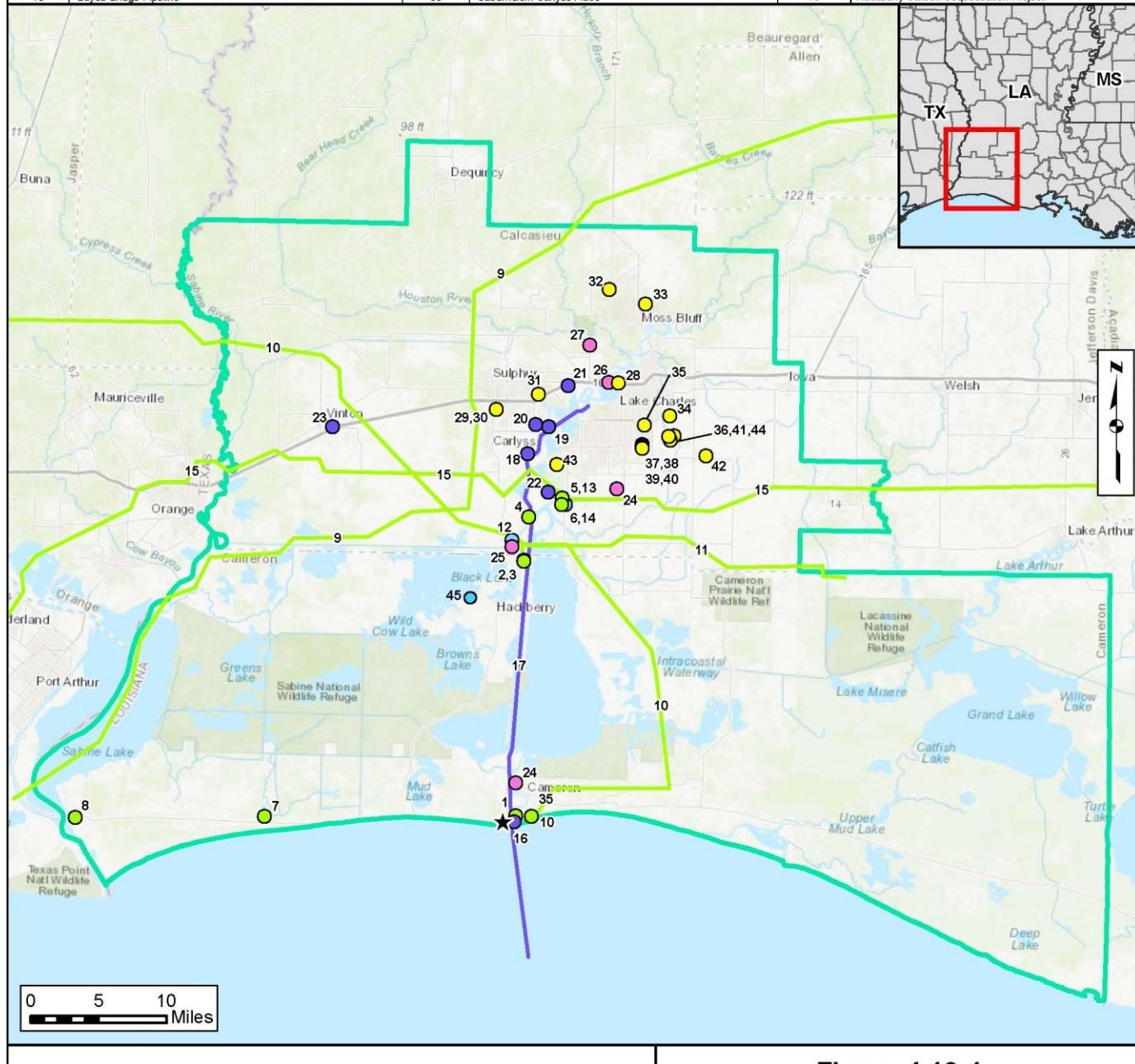


Figure 4.13-1

Commonwealth LNG Project
Past, Present and Future Activities Considered
in the Cumulative Impact Analysis

- ★ Commonwealth LNG Project
- Industrial Projects
- Energy Projects
- FERC-jurisdictional LNG and Pipeline Projects
- Transportation, Port, and Road Improvement Projects
- Residential and Commercial Projects
- Socioeconomic Geographic Scope

TABLE 4.13-2

Past, Present and Reasonably Foreseeable Activities Considered in the Cumulative Impact Analysis

| Action (Proponent) | Parish, Distance from Facility (F) and/or Pipeline (P) Start Dates | Anticipated Construction (C) and Operation (O) Start Dates | Project Type a/ | Workforce | Approximate Size of Project (acres) a/ (acres) | Impacts on Wetlands (acres) | Impacts on Waterbodies (# crossed) | Resources Potentially Affected b/ |
|---|---|---|---------------------|------------------------|---|-----------------------------|------------------------------------|--------------------------------------|
| FERC-jurisdictional LNG and Pipeline Projects | | | | | | | | |
| Commonwealth LNG (Commonwealth LNG, LLC) | Cameron F/O: 0.0 mile | C: 2023 O: 2026 | LNG export facility | C: 2,000 O: 65 | 230.8 | 89.9 | 8 | N/A |
| Calcasieu Pass LNG Terminal and Trans Cameron Pipeline (Venture Global) Docket # CP15-550-000 | Cameron F: 0.3 mile east P: 0.8 mile east | C: Complete O: Ongoing | LNG export facility | C: 1,410 (peak) O: 130 | F: 413 P: 370 | 445 | 123 | All |
| Cameron LNG (Cameron LNG Holdings, LLC) Docket # CP13-25-000 | Cameron F: 18 miles north P: 16 miles north | C: Complete O: Ongoing | LNG export facility | O: 90 | 824 | 214 | 28 | AO, AR, GW, LS, RT, S, SW, VT, VW, W |
| Cameron LNG Expansion (Cameron LNG Holdings, LLC) Docket # CP15-560-000 | Cameron F: 18 miles north | C: Pending O: 2026 | LNG export facility | C: 3,269 (peak) O: 69 | 141 1/2 | 0 | 0 | AO, AR, GW, LS, RT, S, SW, VT, VW, W |
| Driftwood LNG (Driftwood LNG, LLC) Docket # CP17-117-000 | Calcasieu F: 22 miles north P: 20 miles north | C: Ongoing O: 2026 | LNG export facility | C: 6,500 (peak) O: 539 | Facility: 720 Pipeline: 1,880 | Facility: 319 Pipeline: 426 | 317 | AO, AR, GW, LS, RT, S, VT, VW, W |
| Lake Charles LNG (Lake Charles LNG Company, LLC) Docket # CP14-120-000 | Calcasieu F: 24 miles north P: 22 miles north | C: Pending O: 2028 | LNG export facility | C: 5,600 (peak) O: 176 | 1,516 | 253 | 104 | AO, AR, GW, LS, RT, S, VT, VW, W |

TABLE 4.13-2

Past, Present and Reasonably Foreseeable Activities Considered in the Cumulative Impact Analysis

| Action (Proponent) | Parish, Distance from Facility (F) and/or Pipeline (P) | Anticipated Construction (C) and Operation (O) Start Dates | Project Type a/ | Workforce | Approximate Size of Project (acres) a/ | Impacts on Wetlands (acres) | Impacts on Waterbodies (# crossed) | Resources Potentially Affected b/ |
|--|--|--|---|--|---|-----------------------------|------------------------------------|---|
| Magnolia LNG (Magnolia LNG, LLC) Docket #'s CP14-347-000, CP14-511-000, CP19-19-000 | Calcasieu F: 23 miles north P: 21 miles north | C: Pending O: 2026 | LNG export facility | C: 781 O: 67 | Facility: 129 Pipeline: 76 | 15 | 10 | AO, AR, GW, LS, RT, S, VT, VW, W |
| Delfin LNG (Delfin LNG LLC) Docket #'s CP 15-490-000, and CP 16-20-000 | F/P: 45 miles south-southeast | C: Pending O: 2024 | LNG export facility (offshore) | C: 200 O: 200-400 | N/A (offshore) | 0 | 1 | S |
| Sabine Pass Liquefaction Expansion (Cheniere LNG) Docket # CP13-552-000 | Cameron F: 30 miles west P: 30 miles west | C: Present O: 2019/2023 | LNG export facility expansion | C: 2,500 (peak) O: 150 | Facility: 401 Pipeline: 1,697 | Facility: 154 Pipeline: 276 | Facility: 0 Pipeline: 109 | S, AO |
| Port Arthur Pipeline Louisiana Connector (Sempra LNG & Midstream) Docket #'s CP17-20-000, CP17-21-000, CP18-7-000 | Calcasieu, Cameron F: 22.8 miles north-northwest P: 19.4 miles north-northwest | C: Pending O: 2028 | Natural gas pipeline | C: 600 (peak) O: 10 | 2,807 | 636.9 | 167 | S, AO |
| CP2 LNG and CP Express Project (Venture Global) Docket # CP22-21-000 | Cameron F: 1.3 miles E P: 1.7 miles E | C: 2023 O: 2025 | New LNG Facility and 87.5-mile pipeline | C: 4,400 (facility peak) 1,625 (pipeline peak) O: 250 (facility) 10 (pipeline) | Facility: 672.2 Pipeline: 1,384 (estimated) | Facility: 86.9 | 120 | AO, AR, GS, GW, LS, R, S, SW, VW, VT, W |

TABLE 4.13-2

Past, Present and Reasonably Foreseeable Activities Considered in the Cumulative Impact Analysis

| Action (Proponent) | Parish, Distance from Facility (F) and/or Pipeline (P) | Anticipated Construction (C) and Operation (O) Start Dates | Project Type a/ | Workforce | Approximate Size of Project (acres) a/ | Impacts on Wetlands (acres) | Impacts on Waterbodies (# crossed) | Resources Potentially Affected b/ |
|--|--|--|--|----------------|--|-----------------------------|------------------------------------|-----------------------------------|
| Cameron Access Project Docket#CP15-109-000) | Calcasieu & Cameron F: 18.7 miles N P: 16.0 miles N | C: Complete O: Ongoing | 34 miles of new 30- and 36-inch pipeline | C: 200 O: 3 | 560.1 | 49.2 | 96 | RT, S, |
| Energy Projects | | | | | | | | |
| Cameron LNG – Entergy Transmission Line and Switchyard (Entergy Louisiana) | Cameron F: 18 miles north P: 16 miles north | C: Complete O: Ongoing | 12-mile transmission line and switchyard | N/A | 220 | N/A | N/A | AO, S |
| Lake Charles LNG – Energy Transmission Line (Entergy Louisiana) | Calcasieu F: 24 miles north P: 22 miles north | C: Pending O: 2025 | 19-mile transmission line | N/A | N/A | N/A | N/A | AO, S |
| Magnolia LNG – Entergy Transmission Line (Entergy Louisiana) | Calcasieu F: 23 miles north P: 21 miles north | C: 2022 (estimated) O: 2025 | Transmission line | N/A | 26.1 | N/A | N/A | AO, S |
| Bayou Bridge Pipeline (Energy Transfer) | Calcasieu F: 25.5 miles NE P: 22.4 miles NE | C: Complete O: Ongoing | 163-mile, 24-inch, crude oil pipeline. | C: 2,500 O: 12 | N/A | 612.76 | N/A | S |
| Industrial Projects | | | | | | | | |
| Calcasieu Pass Slurry Line (Venture Global) | Cameron F: Adjacent P: 0.8 mile south | C: Complete O: Ongoing | Dredge slurry line | N/A | 7.2 miles | N/A (<10) | N/A (1) | AC, AO, AR, LS, S, SW, VT, W |

TABLE 4.13-2

Past, Present and Reasonably Foreseeable Activities Considered in the Cumulative Impact Analysis

| Action (Proponent) | Parish, Distance from Facility (F) and/or Pipeline (P) | Anticipated Construction (C) and Operation (O) Start Dates | Project Type a/ | Workforce | Approximate Size of Project (acres) a/ | Impacts on Wetlands (acres) | Impacts on Waterbodies (# crossed) | Resources Potentially Affected b/ |
|--|---|--|-----------------------------------|-----------|--|-----------------------------|------------------------------------|-----------------------------------|
| Calcasieu Ship Channel Dredging (COE Port of Lake Charles) | Cameron and Calcasieu F: adjacent P: 0.4 mile east | Ongoing / as needed | Maintenance dredging | N/A | Over 6,000 | 0 | 1 | AC, AO, AR, GS, LS, S, SW, VT, W |
| Advanced Refining Technologies | Calcasieu F: 27.3 miles north P: 24 miles north | C: 2022 (estimated) O: 2024 (estimated) | Aluminum manufacturing facility | 190 | 120 | N/A | N/A | AO, S |
| Lake Charles Methanol | Calcasieu F: 29.3 miles north P: 26 miles north | C: 2021 O: Pending | Petrochemical production facility | 1,000 | 250 | N/A | N/A | AO, S |
| Indorama Ventures | Calcasieu F: 29 miles north-northeast P: 26 miles north-northeast | C: Complete O: Ongoing | Ethane cracker facility | 600 | 125 | N/A | N/A | AO, S |
| Lotte Axial | Calcasieu F: 31 miles north-northeast P: 28 miles north-northeast | C: Complete O: Ongoing | Ethylenne production facility | 2,000 | 215 | N/A | N/A | S |

TABLE 4.13-2

Past, Present and Reasonably Foreseeable Activities Considered in the Cumulative Impact Analysis

| Action (Proponent) | Parish, Distance from Facility (F) and/or Pipeline (P) | Anticipated Construction (C) and Operation (O) Start Dates | Project Type a/ | Workforce | Approximate Size of Project (acres) a/ | Impacts on Wetlands (acres) | Impacts on Waterbodies (# crossed) | Resources Potentially Affected b/ |
|--|---|---|--------------------------------|-----------------------------|--|--|------------------------------------|---|
| G2X Big Lake Fuels | Calcasieu F: 23.9 miles northeast P: 20.7 miles northeast | C: Present/on hold O: unavailable | Methanol production facility | 2,500 | 200 | N/A | N/A | AO, S |
| Port of Vinton | Calcasieu F 31.4 miles NW P: 28.7 miles NW | C: Complete O: Ongoing | Dredging | N/A | N/A | N/A | N/A | S |
| Transportation, Port, and Road Improvement Projects | | | | | | | | |
| Port Louisiana (formerly Port Cameron) | Cameron F: 2.0 miles northeast P: 1.1 mile east | C: Start date unavailable; duration four years. O: unavailable. | Deepwater Port | C: 9,785 (peak) O: 3,860 | 850 | N/A | N/A | AO, AR, LU, LS, R, RT, S, SW, VW, VT, W |
| West Calcasieu Port Projects | Calcasieu F: 20.1 miles north P: 19 miles north | C: Complete O: Ongoing | Port improvements | N/A | N/A | N/A | N/A | AO, AR, LS, R, RT, S, SW, VW, VT, W |
| I-10 Calcasieu River Bridge (DOTD) | Calcasieu F 32.7 miles N P: 30.2 miles N | C: Pending O: Pending | Bridge replacement | N/A | N/A | N/A | N/A | RT, S |
| LA-378 Adaptive Traffic Management (DOTD) | Calcasieu F 32.5 miles N P: 29.9 miles N | C: Complete O: Ongoing | Adaptive traffic signal system | N/A | 0 | Calcasieu F 32.5 miles N P: 29.9 miles N | RT | |

TABLE 4.13-2

Past, Present and Reasonably Foreseeable Activities Considered in the Cumulative Impact Analysis

| Action (Proponent) | Parish, Distance from Facility (F) and/or Pipeline (P) P: 2.0 miles east | Anticipated Construction (C) and Operation (O) Start Dates | Project Type a/ C: Complete O: Ongoing | Workforce | Approximate Size of Project (acres) a/ (acres) a/ | Impacts on Wetlands (acres) | Impacts on Waterbodies (# crossed) | Resources Potentially Affected b/ AO, S |
|---|---|---|--|--------------------------------|--|-----------------------------|------------------------------------|--|
| Municipal, Medical, and Educational Projects | | | | | | | | |
| Cameron Courthouse | Cameron F: 2.4 miles northeast P: 2.0 miles east | | Municipal building improvements | N/A | N/A (<10) | N/A (<10) | N/A (0) | AO, S |
| Commercial and Residential Projects | | | | | | | | |
| Port Wonder | Calcasieu F 32.7 miles N P: 30.2 miles N | | C: 2021 O: Pending | New Educational venue | N/A | N/A | N/A | S |
| Subdivision: Belle Savanne | Calcasieu F: 29 miles north P: 27 miles north | | C: Present O: Ongoing | Subdivision under construction | N/A | N/A | N/A | AO, S |
| Subdivision: Carlyss Place | Calcasieu F: 29 miles north P: 27 miles north | | C: Present O: Ongoing | Subdivision under construction | N/A | N/A | N/A | AO, S |
| Subdivision: Maple Creek | Calcasieu F: 30 miles north P: 28 miles north | | C: Present O: Ongoing | Subdivision under construction | N/A | N/A | N/A | S |

TABLE 4.13-2

Past, Present and Reasonably Foreseeable Activities Considered in the Cumulative Impact Analysis

| Action (Proponent) | Parish, Distance from Facility (F) and/or Pipeline (P) | Anticipated Construction (C) and Operation (O) Start Dates | Project Type a/ | Workforce | Approximate Size of Project (acres) a/ | Impacts on Wetlands (acres) | Impacts on Waterbodies (# crossed) | Resources Potentially Affected b/ |
|-----------------------------------|---|--|--------------------------------|-----------|--|-----------------------------|------------------------------------|-----------------------------------|
| Subdivision: Orleans Run | Calcasieu F: 39 miles north-northeast P: 37 miles north-northeast | C: Present O: Ongoing | Subdivision under construction | N/A | N/A | N/A | N/A | S |
| Subdivision: Wisteria Vine | Calcasieu F: 38 miles north-northeast P: 36 miles north-northeast | C: Present O: Ongoing | Subdivision under construction | N/A | N/A | N/A | N/A | S |
| Subdivision: Audubon Place | Calcasieu F: 31 miles northeast P: 29 miles northeast | C: Present O: Ongoing | Subdivision under construction | N/A | N/A | N/A | N/A | S |
| Subdivision: Savannah Lakes | Calcasieu F: 30 miles northeast P: 28 miles northeast | C: Present O: Ongoing | Subdivision under construction | N/A | N/A | N/A | N/A | AO, S |
| Subdivision: Lakes at Morganfield | Calcasieu F: 30 miles northeast P: 28 miles northeast | C: Present O: Ongoing | Subdivision under construction | N/A | N/A | N/A | N/A | AO, S |

TABLE 4.13-2

Past, Present and Reasonably Foreseeable Activities Considered in the Cumulative Impact Analysis

| Action (Proponent) | Parish, Distance from Facility (F) and/or Pipeline (P) | Anticipated Construction (C) and Operation (O) Start Dates | Project Type a/ | Workforce | Approximate Size of Project (acres) a/ | Impacts on Wetlands (acres) | Impacts on Waterbodies (# crossed) | Resources Potentially Affected b/ |
|-------------------------------------|--|--|--------------------------------|-----------|--|-----------------------------|------------------------------------|-----------------------------------|
| Subdivision: Village at Morganfield | Calcasieu F: 29 miles northeast P: 27 miles northeast | C: Present O: Ongoing | Subdivision under construction | N/A | N/A | N/A | N/A | AO, S |
| Subdivision: Cove at Morganfield | Calcasieu F: 29 miles northeast P: 27 miles northeast | C: Present O: Ongoing | Subdivision under construction | N/A | N/A | N/A | N/A | AO, S |
| Subdivision: Oak Grove | Calcasieu F: 29 miles northeast P: 27 miles northeast | C: Present O: Ongoing | Subdivision under construction | N/A | N/A | N/A | N/A | AO, S |
| Subdivision: Beau Blanc | Calcasieu F: 29 miles northeast P: 27 miles northeast | C: Present O: Ongoing | Subdivision under construction | N/A | N/A | N/A | N/A | AO, S |
| Subdivision: Crest at Morganfield | Calcasieu F: 30 miles northeast P: 28 miles northeast | C: Present O: Ongoing | Subdivision under construction | N/A | N/A | N/A | N/A | AO, S |

TABLE 4.13-2

Past, Present and Reasonably Foreseeable Activities Considered in the Cumulative Impact Analysis

| Action (Proponent) | Parish, Distance from Facility (F) and/or Pipeline (P) | Anticipated Construction (C) and Operation (O) Start Dates | Project Type a/ | Workforce | Approximate Size of Project (acres) a/ | Impacts on Wetlands (acres) | Impacts on Waterbodies (# crossed) | Resources Potentially Affected b/ |
|---|--|--|---------------------------------------|-----------|--|-----------------------------|------------------------------------|-----------------------------------|
| Subdivision: Highland Hills | Calcasieu F: 30 miles northeast P: 28 miles northeast | C: Present O: Ongoing | Subdivision under construction | N/A | N/A | N/A | N/A | AO, S |
| Graywood Subdivision: Jasmine, Willowbrooke, Myrtle Bay, Sawgrass, Oleander, Primrose, Lemongrass | Calcasieu F 25.4 miles N P: 23.5 miles N | C: Ongoing O: Ongoing | Subdivision under construction | N/A | N/A | N/A | N/A | AO, S |
| Morganfield Subdivision: Waterside, Waterside II, Ridge, Wildflower, Waterside Meadows (Pending) | Calcasieu F 29.9 miles northeast P: 27.5 miles northeast | C: Ongoing O: Ongoing | Subdivision under construction | N/A | N/A | N/A | N/A | AO, S |
| Carbon Capture and Sequestration Projects | | | | | | | | |
| Hackberry Carbon Sequestration Project | Calcasieu/Cameron F 16.3 miles northwest P: 13.3 miles northwest | C: pending O: pending | CO ₂ sequestration project | N/A | NA | 0.2 | 3 | AR, GW, LS, S, SW, VW, W |

TABLE 4.13-2

Past, Present and Reasonably Foreseeable Activities Considered in the Cumulative Impact Analysis

| Action (Proponent) | Parish, Distance from Facility (F) and/or Pipeline (P) | Anticipated Construction (C) and Operation (O) Start Dates | Project Type ^{a/} | Workforce | Approximate Size of Project (acres) ^{a/} | Impacts on Wetlands (acres) | Impacts on Waterbodies (# crossed) | Resources Potentially Affected by |
|---|--|--|----------------------------|-----------|---|------------------------------|------------------------------------|-----------------------------------|
| ^{a/} Estimated acreage is based on publicly available project information. | | | | | | | | |
| ^{b/} Acronyms: | | | | | | | | |
| AC – Air Construction | GW – Groundwater | R – Recreation | | | | VW – Vegetation and Wildlife | | |
| AO – Air Operations | LS – Listed Species | RT – Road Traffic | | | | VT – Vessel Traffic | | |
| AR – Aquatic Resources | LU – Land Use | S – Socioeconomics | | | | W – Wetlands | | |
| CR – Cultural Resources* | NC – Noise Construction | SW – Surface Water | | | | | | |
| GS – Geology and Soils | NO – Noise Operation | | | | | | | |
| * There are no activities that cross the proposed Area of Potential Effect of the Project; therefore, cumulative impacts on cultural resources are not expected | | | | | | | | |
| ^{c/} Based upon readily available public information | | | | | | | | |
| N/A = Information not publicly available or not applicable | | | | | | | | |
| DOTD = Department of Transportation and Development | | | | | | | | |

4.13.1.1 FERC-jurisdictional LNG and Pipeline Projects

Due to the potential for some overlap in construction schedules, and the proposed project locations on the Calcasieu Ship Channel, the Cameron LNG Project Expansion, Driftwood LNG, Calcasieu Pass LNG, Lake Charles LNG, CP2 LNG, and Magnolia LNG projects all have the potential to contribute to cumulative impacts on multiple environmental resources (see section 4.13-2). These six projects would result in a combined permitted LNG export capacity of approximately 117.4 MPTA, an estimated increase of 1,233 additional vessels operating within the Calcasieu River Ship Channel, 14.3 million cubic yards of dredging, an estimated 22,467 temporary peak construction jobs over the next five years, and approximately 1,279 permanent positions. It should be noted that these projects include modular construction methods, so several of the generated construction jobs may occur outside of Cameron Parish, and even outside of the U.S. The Sabine Pass Liquefaction Expansion project, on the Sabine River approximately 30 miles west of Commonwealth, would not contribute appreciably to cumulative effects on environmental resources, except for air quality during operation and socioeconomics resulting from the creation of temporary construction jobs, and permanent jobs within the study area. Additional details regarding these projects can be obtained through FERC's website at www.ferc.gov, by using the eLibrary system and the docket number(s) assigned to each project.

Given that the G2 LNG and Monkey Island LNG projects are still in early planning stages, there is generally limited information in the public domain for these projects, and no docket numbers are available, construction is not assumed to overlap with Commonwealth's construction timeframe. We conclude there would be no potential for cumulative impacts in conjunction with these projects.

Calcasieu Pass LNG

The Calcasieu Pass LNG export terminal is a 12 MTPA liquefaction facility directly across the Calcasieu Ship Channel from Commonwealth. The project also includes construction of the TransCameron Pipeline, a 23.4-mile-long natural gas pipeline to supply the terminal. The feed-gas pipeline extends to the east of the terminal, also within Cameron Parish. The project was approved by FERC in 2019 and is currently in the commissioning phase. The project encompasses about 1,069 acres with a portion of the project occurring in the Calcasieu Lake-Calcasieu Pass watershed. Calcasieu Pass LNG had an estimated peak construction workforce of 1,810 employees and expects a permanent workforce of 130 employees. The FERC docket number assigned to the project is CP15-550-000.

Cameron LNG

The Cameron LNG project completed construction and received authorization to commence service on July 24, 2020. The project is currently in operation. The project included expansion of an existing LNG facility to include 3 liquefaction trains, 1 additional storage tank, and a new 21-mile, 42-inch-diameter pipeline. Capacity increased to 14.9 MTPA. The project is sited next to Cameron's existing LNG facility/dock, with no expected change in vessel traffic. The FERC docket number assigned to the project is CP13-25-000.

Cameron LNG Expansion

FERC approved expansion of the Cameron LNG terminal to include 2 additional liquefaction trains in 2016, but no financial investment decision to expand was finalized by the proponent. Cameron LNG recently filed for an extension to construct by May 2026. On January 18, 2022, Cameron filed an application to amend the project to, in part, only construct one of the liquefaction trains. If constructed, the expansion export capacity would increase to 20.9 MTPA. Expansion would occur within the permitted footprint of the Cameron LNG Project. The expansion would have a peak construction workforce of 3,269

employees. The combined permanent workforce of Cameron LNG and the expansion is expected to total 225 employees. The FERC docket number assigned to the project is CP22-41-000.

Driftwood LNG

Driftwood LNG is a 27.6 MTPA LNG export Facility approximately 23 miles north of Commonwealth that was certificated by FERC in 2019. Construction of the LNG facility began in March 2022. The project includes five liquefaction trains, three aboveground LNG storage tanks, a dredged turning basin, and three LNG carrier berths to accommodate an expected average of 365 vessel calls annually. The project has an expected peak construction workforce of 6,500 employees, and 539 permanent employees. The currently anticipated in-service timing for the Driftwood project is 2026. The FERC docket number assigned to the project is CP17-117-000.

Lake Charles LNG

The Lake Charles LNG project has been permitted, and includes modification of an existing LNG import terminal, plus construction and operation of new facilities adjacent to the modified terminal. The new liquefaction facilities will have a design production capacity of 16.45 MTPA and would not increase the number of ships that were previously analyzed to call on the terminal, which is currently 225 annually. The Lake Charles LNG Project would have a peak construction workforce of 5,600 employees and a permanent workforce of 176 employees. The export facilities would affect about 785 acres in the Calcasieu River-Prieville Lake watershed approximately 24 miles north of Commonwealth, and the associated pipeline segment would affect about 244 acres in the Bayou Arceneaux and Lower Bayou Serpent watersheds. Progress reports indicate construction at the site is not currently active. On May 6, 2022, FERC granted an extension of time request from Lake Charles LNG to extend the period in which Lake Charles LNG could construct and place the project facilities into service through December 16, 2028. The FERC docket number assigned to the project is CP14-120-000.

Magnolia LNG

The Magnolia LNG project, sited on an industrial canal on the east side of the Calcasieu Ship Channel approximately 23 miles north of Commonwealth, includes four liquefaction plants, two LNG storage tanks, and two LNG carrier berths. During operation, approximately 208 LNG vessels (104 LNG carriers and 104 LNG barges) would call on the LNG terminal per year. The project was originally approved by FERC in 2016 at a maximum 8.0 MTPA capacity; however, FERC authorized an amendment to increase the output by 0.8 MTPA on June 18, 2020. The total capacity for Magnolia LNG will be 8.8 MTPA. On September 11, 2020, Magnolia requested an extension until April 15, 2026 to construct the project. The Magnolia Project would have a peak construction workforce of 781 employees and a permanent workforce of 67 employees. Construction has not started on this project as of the issuance of this document. To supply the LNG terminal, Kinder Morgan Louisiana Pipeline (KMLP) would modify its existing pipeline system to include a new compressor station, new natural gas header pipelines adjacent to the existing easement, and modifications at six existing meter stations. Construction of Magnolia LNG would affect about 129 acres within the Calcasieu River-Prieville Lake watershed. The FERC docket numbers assigned to the project are CP14-347-000, CP14-511-000, and CP19-19-000.

Delfin LNG

The Delfin LNG project would include the construction of a floating liquefaction and LNG terminal in the Gulf of Mexico, approximately 45 miles south of Commonwealth. This offshore facility would also include an onshore compressor system, monitoring, and piping which would be approximately 20 miles west of the Commonwealth LNG Facility. In 2017, the offshore facility was approved by the U.S. Department of Energy (DOE) (DOE docket number 13-147-LNG), and FERC approved the onshore

facilities (docket numbers CP15-490-000, and CP16-20-000). The project has an estimated construction workforce of 200 employees, and 200 to 400 permanent employees. Although the project was slated to begin operations in 2021/2022, construction has not begun, and Delfin received an extension from FERC in 2019 to begin construction by September 2020. Delfin requested an additional extensions in June 2021 and July 2022 to place onshore facilities into service to September 2023. The project is now anticipated to be operational by 2024.

Sabine Pass Liquefaction Expansion

Expansion of the Sabine Pass LNG Terminal was approved by FERC in 2015 to include two additional LNG trains (Trains 5 and 6), each with an average liquefaction capacity of 4.5 MTPA. Trains 5 and 6 are constructed and operational. The maximum number of vessel calls (400) did not increase with the expansion. The project also includes a 104-mile-long pipeline. The FERC docket number assigned to the project is CP13-552-000.

Port Arthur Pipeline Louisiana Connector

The Port Arthur Pipeline Louisiana Connector Project consists of about 131 miles of new 42-inch-diameter natural gas pipeline, one new compressor station, and interconnect facilities in east Texas and western Louisiana. A portion of the project in Louisiana would be in Calcasieu Parish, about 23 miles north of Commonwealhty. FERC approved the project in 2019, and the docket numbers assigned to the project are CP17-20-000, CP17-21-000, and CP18-7-000. The Port Arthur Pipeline Louisiana Connector project would have a peak construction workforce of 600 employees and a permanent workforce of 10 employees. Construction would affect about 2,807 acres within 13 watersheds outside the HUC-12 scope of this analysis. On August 2, 2022, the Port Arthur Pipeline, LLC requested from FERC an extension of time until June 18, 2028 to complete construction of the project and make the pipeline available for service.

CP2 LNG and CP Express Project

The CP2 LNG and CP Express project consists of a terminal site, marine facilities, a pipeline, and aboveground facilities. The CP2 LNG project would affect about 737 acres of land with the terminal (600 acres) sited east of the existing Calcasieu Pass Terminal and the associated marine facilities (122 acres) located on the southern portion of Monkey Island. CP Express Pipeline would include 85.4 miles of new, 48-inch-diameter pipeline, 6 miles of new, 24-inch-diameter lateral pipeline, and aboveground facilities. About 30 miles of the pipeline would be in Cameron Parish. The CP2 LNG and CP Express project would have a peak construction workforce of 4,400 employees at the terminal and 1,625 employees for the pipeline and a permanent workforce of 260 employees. Venture Global filed its application in December 2021. The FERC docket number assigned to the project is CP22-21-000.

4.13.1.2 Energy Projects

Entergy Louisiana has three ongoing or planned electrical transmission projects to accommodate the increased demands from LNG export terminal projects. These transmission projects may include construction within existing or new rights-of-way. A 12-mile-long 230-kV transmission line and new switchyard project is underway to accommodate Cameron LNG projects, and 19 miles of new 230- kV electrical transmission line will support the Lake Charles LNG Project. Additionally, the Bayou Bridge Pipeline, a 163-mile-long oil pipeline, was recently completed in 2019. The pipeline crosses about 45 miles through Calcasieu Parish from west to east.

This EIS is not characterizing the Project's GHG emissions as significant or insignificant because the Commission is conducting a generic proceeding to determine whether and how the Commission will conduct significance determinations going forward.¹⁶² GHG impacts are more fully addressed in section 4.11.1 and cumulative GHG impacts are discussed in this section.

As described throughout this EIS, the proposed Project would have a range of impacts on individuals living in the vicinity of the Project facilities, including environmental justice populations. Based on our analysis, environmental justice communities in the study area would experience cumulative impacts on wetlands, surface water, aquatic resources, socioeconomics, traffic, noise, air quality, GHG and significant visual impacts related to the project and the additional projects listed in table 4.13-2. Cumulative impacts on environmental justice communities related to wetlands, surface water, aquatic resources, visual resources, socioeconomics, traffic, noise, and air quality would be less than significant. However, cumulative impacts related to visual resources would be significant.

4.13.2.8 Air Quality

Construction

Air emissions during construction would be limited to vehicle and construction equipment emissions and dust and would be localized to the project construction sites. Construction of the Project would result in increases in emissions of criteria pollutants, VOCs, HAPs, GHG, and fugitive dust emissions from combustion of fuel in vehicles and equipment; dust generated from excavation, grading, and fill activities and driving on unpaved roads; and general construction activities (e.g., coating and welding operations). Generally, construction projects within the geographic scope for construction air quality with multiple-year overlapping construction schedules or single-year projects that occur in the same year could cumulatively contribute to air quality impacts. Construction impacts vary based on factors such as timing of the construction projects, intensity and type of construction activity underway at any given time, quantity and size of emission-producing equipment in operation, distance separating the projects, soil silt content, quantity of dust-producing material being handled, and dry or windy conditions. Other projects that occur within the geographic scope for analysis of the cumulative impact on air quality during construction include maintenance dredging of the Calcasieu Ship Channel, the Calcasieu Pass LNG project, and the Calcasieu Pass Slurry Line.

Construction activities at the CP2 LNG project could overlap with construction of Commonwealth. Although the main terminal portion of the CP2 LNG project would be constructed beyond the 1.0-mile geographic scope of cumulative impacts on air quality related to construction, a portion of the CP2 LNG marine facilities would be constructed within 1.0 mile of the Terminal. Fugitive dust emissions would be at their peak during facility footprint clearing and earth moving, and if these activities were to occur at the same time, there could be a temporary cumulative air quality impact from fugitive dust. Emissions of criteria pollutants from combustion of fuel in equipment and vehicle exhausts from construction of both projects could also contribute to cumulative air impacts in the region. These emissions would be minimized by typical control techniques such as the use of low-sulfur diesel fuel, proper operation of equipment, and minimization of daily emissions by only working during daylight hours (versus 24-hour operations). If intensive construction activities were occurring simultaneously, such as in the civil phase of construction, there would be a temporary cumulative air quality impact from emissions from equipment and vehicle exhaust.

If maintenance dredging of the Calcasieu Ship Channel and/or operation of CP2 LNG dredge slurry line were to occur at the same time as construction of Commonwealth, emissions of criteria pollutants from

162 See Order on Draft Policy Statements, 178 FERC ¶ 61,197 (2022).

combustion of fuel in equipment and vehicle exhausts from the combined projects could also contribute to cumulative air impacts in the region. Commonwealth would minimize impacts on air quality during construction by adopting the following measures:

- require that contractors meet all air quality requirements and employ equipment that meets relevant emission standards;
- require contractors to properly maintain and operate construction equipment to minimize exhaust emissions, including minimizing engine idling time; use paved roads, when practical, and water unpaved roads being used, as needed;
- apply water to dirt stockpiles;
- cover open haul trucks, as needed;
- limit vehicle speeds;
- apply water to disturbed areas, as needed; and
- stabilize disturbed areas upon completion of construction.

Additionally, Commonwealth would require vehicular and/or barge exhaust and crankcase emissions from gasoline and diesel engines to comply with applicable EPA mobile source emission regulations (40 CFR 85) by using equipment manufactured to meet these specifications. The other projects in the geographic scope would also be expected to follow similar BMPs to minimize impacts on air quality.

The combustion and fugitive dust emissions that would occur during construction would be largely limited to the immediate vicinity of the existing Terminal site and to a lesser extent in the areas where the Pipeline would be constructed. These would subside once construction has been completed. Therefore, we conclude the construction-related impact on local air quality during construction of the Terminal and Pipeline would not be significant. Given Commonwealth's implementation of mitigation, and the temporary timeframe of construction activities plus the minor overlap of construction facilities with the CP2 LNG Project (i.e., only a portion of the project would be constructed within the geographic cumulative impacts scope of the Project), we conclude that the Project would not contribute significantly to cumulative impacts on air quality during construction.

Operations

Emission sources from operation of the Project would be associated with the gas turbines, generators, LNG storage tanks, two thermal oxidizers, two flare systems, gas pretreatment unit, LNG carrier emissions, and vehicle travel emissions. Under federal and LDEQ regulations, the Terminal is considered a major PSD emission source and would contribute to cumulative impacts on air quality within the cumulative impact area. The potential for other projects to cumulatively interact with emissions from the Project depends on the type of project, its stage of development, and the impact of significant ongoing air pollutant emissions to overlap with either a compressor station or the Terminal.

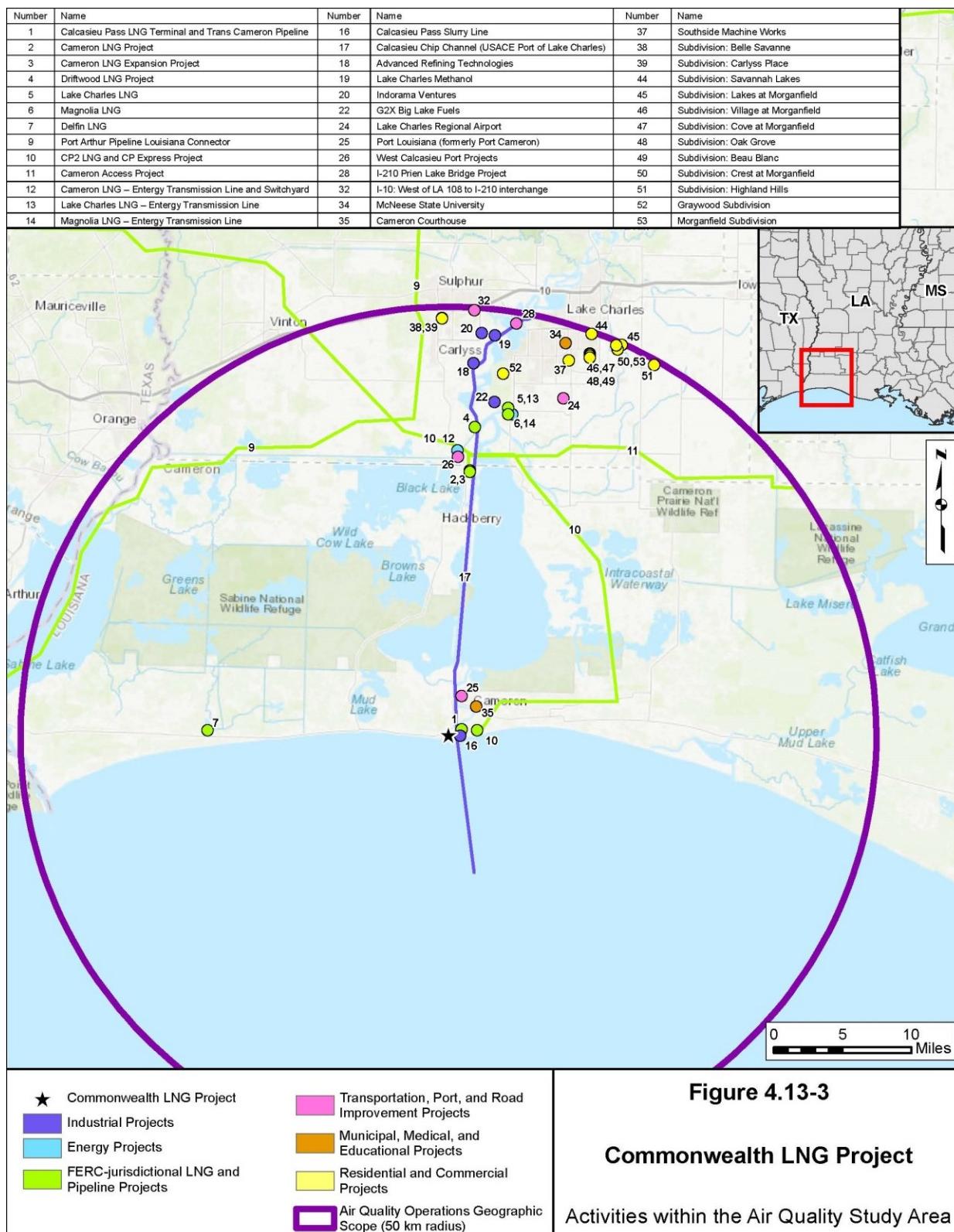
Air quality would be affected by operation of the present and future actions considered in the cumulative impact analysis (figure 4.13-3). There are 36 cumulative actions identified within the geographic scope for operational air quality impacts, which is within 50 kilometers (31.1 miles) of the proposed Terminal. These projects include nine FERC-jurisdictional projects, three energy projects, six industrial projects, four transportation projects, 11 residential projects, and three municipal, educational, and commercial projects. Impacts on air quality from projects beyond 50 kilometers would be below *de minimis* thresholds.

Operational emissions from several projects within the operational cumulative geographic scope for air quality are small, dispersed, and accounted for in background concentrations used in NAAQS modelling for larger point sources (e.g., underground pipeline or electrical transmission lines with minimal emissions, residential heating, and vehicle traffic on roadways). Therefore, these projects were not discussed individually.

Construction of the other projects with operational air emissions requiring permits for point source emissions (e.g., Calcasieu Pass LNG, CP2 LNG) would result in air quality impacts similar to the Project. These projects that are considered major sources of air emission would be required to conduct a PSD analysis and meet similar permit conditions as the Commonwealth Project. In addition, any other potential future projects that are considered major sources of air emissions would be required to conduct a PSD analysis. Should operation of a new project result in a significant impact on air quality, the LDEQ would enforce operational limitations or require emissions controls that ensure compliance with the state implementation plan and attainment with the NAAQS. In addition, Commonwealth would be required to comply with any LDEQ permit conditions during operation.

As detailed in section 4.11.1.6, Commonwealth performed a cumulative modeling analysis for each pollutant that exceeded the SIL (1-hour and annual NO₂, 1-hour SO₂, and 24-hour PM_{2.5}). Commonwealth's pollutant sources were modeled along with additional (background) sources from off-site inventory (obtained from LDEQ's Emissions and Inventory Reporting Center) within the pollutant-specific area of impact and averaged over five years to determine source contribution in comparison with the NAAQS. The area of impact was established as the distance from the Project to the farthest receptor that showed a modeled impact greater than the SIL in the significance modeling analysis. The background sources inventory included all sources within the area of impact plus 15 km and all major sources within the area of impact plus 20 km (in either case the area of impact would not extend beyond 50 km due to the accuracy constraints of dispersion models). The sources modeled included the Calcasieu Pass LNG facility as well as other existing LNG facilities in the Lake Charles vicinity.

Modeling indicated the maximum impact plus background sources for 1-hour NO₂ also exceeded the NAAQS of 188 µg/m³. None of the other three pollutants exceeded the respective NAAQS concentrations. Per LDEQ protocols, Commonwealth conducted a source contribution analysis to determine whether the Project would contribute significantly to the modeled 1-hour NO₂ NAAQS exceedance. The modeling output provided the following: the predicted modeled maximum impact plus background sources concentrations for all locations within 50 km of the Project site that exceeded the NAAQS for 1-hour NO₂; the Project-only maximum concentrations at the locations; the respective percentage that the Project would contribute to the maximum impact concentrations; and the distance from the Project where the NAAQS would be exceeded (see appendix H). FERC conducted additional modeling to incorporate the impacts from the Project's stationary sources as well as LNG carriers and tugs in the moored safety zone into the source contribution analysis conducted for LDEQ.



The modeling results indicate the proportions of the NAAQS exceedance concentrations attributable to the Project are very small, both for the LNG stationary source-only analysis as well as the inclusion of LNG carriers and tugs. In fact, the exceedances would still be predicted in the absence of the Project (i.e., the existing background emissions sources from LDEQ's Emissions and Inventory Reporting Center are driving the NAAQS exceedances). In the instance of the highest overall modeled maximum impact for stationary sources plus background sources concentration ($229 \text{ } \mu\text{g}/\text{m}^3$), the Project-only concentration contribution ($0.0004 \text{ } \mu\text{g}/\text{m}^3$) is well below the SIL concentration for 1-hour NO₂ ($7.5 \text{ } \mu\text{g}/\text{m}^3$). Similarly, in the instance of the highest overall modeled maximum impact for stationary sources and LNG carriers and tugs, plus background sources concentration ($308 \text{ } \mu\text{g}/\text{m}^3$), the Project-only (inclusive of LNG carriers and tugs) concentration contribution ($0.005 \text{ } \mu\text{g}/\text{m}^3$) is well below the SIL concentration for 1-hour NO₂ ($7.5 \text{ } \mu\text{g}/\text{m}^3$). The Project-only (LNG stationary sources) and Project-only plus LNG carriers and tugs concentration contributions at the NAAQS-exceedance locations in which the Project's contribution is the highest of the total modeled maximum impact plus background sources concentration ($0.43 \text{ } \mu\text{g}/\text{m}^3$ and $2.8 \text{ } \mu\text{g}/\text{m}^3$, respectively) are both well below the SIL concentration for 1-hour NO₂. The modeling analysis demonstrates that the proposed Project would not cause or contribute to a potential NAAQS exceedance and would only contribute a minor amount to cumulative air impacts with the geographic scope of this analysis.

4.13.2.9 Noise

The proposed Terminal site is in a primarily rural area with a few industrial sites to the north and east along the Calcasieu Ship Channel. The nearest NSA to the proposed Terminal, an RV site used as a year-round residence by the landowner (NSA 2), is approximately 0.4 mile to the west. The 3-mile Pipeline is also in a rural area, with noise levels along the Pipeline route influenced by rural background sources. The RV site west of the Terminal is also within 0.5 mile of the HDD site and the southern terminus of the Pipeline route (section 4.11.2). A second NSA, temporary ship pilot residences on the southern end of Monkey Island (NSA 1), is approximately 0.5 mile northeast of the Terminal. Construction noise would be generated over an extended period of approximately 36 to 38 months at the Terminal site and for about 12 months for the Pipeline. Construction activity and associated noise levels associated with the Project or with other projects within the geographic scope for cumulative impacts would vary depending on the construction activities. The highest level of construction noise typically occurs during earth-moving and pile-driving work. Commonwealth expects peak construction noise to occur during construction months 10 through 12 when earth moving activities would coincide with pile driving and dredging at the Terminal. The sound level impacts on NSAs due to construction activities would depend on the type of equipment used, the duration of use for each piece of equipment, the number of construction vehicles and machines used simultaneously, and the distance between the sound source and receptor. Construction of Commonwealth and CP2 LNG is likely to overlap if both projects are permitted and constructed. Both projects would conduct pile-driving activities during daytime hours. Although the CP2 LNG terminal is more than 1.5 miles east of the Project Terminal, the marine facility would be approximately 0.65 mile northeast of the Terminal. At approximately 1.25 miles northeast of NSA 2, the CP2 LNG marine facility would be beyond the geographic range for cumulative noise impacts on NSA 2. However, NSA 1 is immediately adjacent to the proposed location of the CP2 LNG marine terminal and within 0.5 mile of the Project marine facilities. Cumulative construction noise impacts on NSA 1 if pile driving and/or dredging were to occur simultaneously at both locations would likely be significant, due primarily to impacts from the CP2 LNG project. In section 4.11.2.4 we recommend that Commonwealth restrict construction noise levels to less than 55 dBA L_{dn} (48.6 dBA L_{eq}) between the hours of 7:00 p.m. and 7:00 a.m.

It is possible that dredging at Commonwealth, Calcasieu Pass LNG, CP2 LNG, and/or periodic channel maintenance could occur simultaneously. As detailed in table 4.11.2-5, the likely worst-case noise impacts of dredging at the Project alone at NSA 1 would result in 24-hour (L_{dn}) values of 60.1 dBA. If simultaneous dredging activities occurred, the Project has the potential to contribute to cumulative noise

impacts on nearby NSAs. In response to our recommendation in the draft EIS, Commonwealth has provided measures it would implement to reduce the projected nighttime noise levels to at or below 55 dBA Ldn at NSA 1 and how it would monitor the noise levels during dredging activities. With implementation of an effective noise mitigation plan for nighttime dredging, Commonwealth's contribution to cumulative noise impacts would be temporary and limited to daytime hours.

Operation of the Terminal site would produce noise on a continuous basis, primarily from compressor piping and air coolers. The underwater noise impacts on wildlife are discussed in section 4.6.2. The combined operation of the Project and the Calcasieu Pass LNG terminal could result in an increase of the average ambient noise level at NSA 1 (the CP2 LNG terminal would be more than 1 mile from the Project Terminal and NSA 1 and the Calcasieu Pass LNG terminal and the CP2 LNG site are both more than 1 mile from NSA 2). The Commission required Calcasieu Pass LNG to implement noise controls to ensure operating noise levels at NSAs (including Commonwealth's NSA 1) would be at or below the 55 dBA threshold. As detailed in section 4.11.2.4, Commonwealth does not expect 24-hour (L_{dn}) Terminal operation noise levels at NSA 1 to exceed 52.3 dBA (55.5 dBA combined Terminal plus ambient noise). We have included a recommendation in section 4.11.2.4 for Commonwealth to modify operation of the liquefaction facilities or install additional noise controls to keep operation noise levels below 55 dBA if a full power load noise survey conducted by Commonwealth after start-up indicates noise levels due to facility operation are above the 55 dBA threshold. The combined operation of the Project and Calcasieu Pass LNG, if both terminals are operating at 55 dBA noise levels, would be approximately 58.0 dBA. This would be an increase in the average ambient noise level at NSA 1 but, at 3.1 dBA, the increase would likely not be perceptible to humans per EPA documentation (1978). Therefore, operation of the Terminal would likely contribute to cumulative noise increases but these increases would not be significant.

Normal operations of the proposed Pipeline would not result in permanent noise impacts on NSAs. Pipeline blowdown events could generate temporary noise impacts (likely lasting 20 minutes to 2 hours) and planned events could allow for slower gas release and be scheduled for daytime hours, thus reducing the noise impacts. Emergency pipeline blowdowns can occur at any time but are typically infrequent and of short duration. All blowdown events for the Pipeline would be routed through the Terminal flaring system. Due to their temporary nature, blowdown events (planned or unplanned) would cause a negligible contribution to potential cumulative noise impacts on NSAs.

4.13.2.10 Safety and Reliability

Potential impacts on public safety would be mitigated through implementation of applicable federal, state, and local rules and regulations for the proposed Project. These rules and regulations, described in Section 4.12 would ensure appropriate standards would be applied to design and engineering, construction, operation, and maintenance to protect the public and avoid or minimize the potential for accidental or intentional incidents. The other LNG projects listed in table 4.13-2 would be required to follow the same rules and regulations, and other large industrial projects listed in table 4.13-2 would be subject to similar rules and regulations. These rules and regulations are intended to protect the public from the potential impacts of industrial projects singularly and cumulatively, and no significant cumulative impact on public safety is anticipated. Public services, including emergency services, would need to be appropriately sized to accommodate the population at the time the Project was constructed and operated. In addition, the Project and the other LNG projects would be required to prepare a comprehensive *Emergency Response Plan* (per 49 CFR 192.615) and identify the cost sharing mechanisms for funding these emergency response activities. These plans would minimize the potential for impacts on public safety from individual projects or when considered cumulatively with the other concurrent projects. In the unlikely event that major incidents occur at multiple facilities concurrently, the acute cumulative demand on emergency services would likely be significant; however, assistance from emergency service providers from neighboring parishes and communities would serve to mitigate the demand. Therefore, we conclude

that the impact of the Project, when considered cumulatively with the other concurrent projects, would not have a significant impact on demand for public services.

4.13.2.11 Climate Change

Several commentors raised concerns regarding Project emissions of GHGs and associated climate change impacts. Climate change is the variation in the Earth's climate (including temperature, precipitation, humidity, wind, and other meteorological variables) over time. Climate change is driven by accumulation of GHGs in the atmosphere due to the increased consumption of fossil fuels (e.g., coal, petroleum, and natural gas) since the early beginnings of the industrial age and accelerating in the mid- to late-20th century.¹⁶³ The GHGs produced by fossil-fuel combustion are carbon dioxide, methane, and nitrous oxide.

In 2017 and 2018, the U.S. Global Change Research Program¹⁶⁴ issued its Climate Science Special Report: Fourth National Climate Assessment, Volumes I and II.¹⁶⁵ This report and the recently released report by the Intergovernmental Panel on Climate Change, Climate Change 2021: The Physical Science Basis, state that climate change has resulted in a wide range of impacts across every region of the country and the globe. Those impacts extend beyond atmospheric climate change alone and include changes to water resources, agriculture, ecosystems, human health, and ocean systems.¹⁶⁶ According to the Fourth Assessment Report, the United States and the world are warming; global sea level is rising and oceans are acidifying; and certain weather events are becoming more frequent and more severe.¹⁶⁷ These impacts have accelerated throughout the end of the 20th and into the 21st century.¹⁶⁸

GHG emissions do not result in proportional local and immediate impacts; it is the combined concentration in the atmosphere that affects the global climate system. These are fundamental global impacts that feedback to local and regional climate change impacts. Thus, the geographic scope for cumulative analysis of GHG emissions is global, rather than local or regional. For example, a project 1 mile away emitting 1 ton of GHGs would contribute to climate change in a similar manner as a project 2,000 miles distant also emitting 1 ton of GHGs.

Climate change is a global concern; however, for this analysis, we focus on the existing and projected climate change impacts on the general Project area. The USGCRP's Fourth Assessment Report notes the following observations of environmental impacts are attributed to climate change in the southeast region of the United States (USGCRP, 2017; USGCRP, 2018):

163 INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, UNITED NATIONS, *Summary for Policymakers of CLIMATE CHANGE 2021: THE PHYSICAL SCIENCE BASIS* (Valerie Masson-Delmotte et al. eds.) (2021), https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf (IPCC Report) at SPM-5. Other sources contribute to climate change, such as agriculture, forest clearing, and other anthropogenically driven sources.

164 The U.S. Global Change Research Program is the leading U.S. scientific body on climate change. It comprises representatives from 13 federal departments and agencies and issues reports every 4 years that describe the state of the science relating to climate change and the effects of climate change on different regions of the United States and on various societal and environmental sectors, such as water resources, agriculture, energy use, and human health.

165 U.S. GLOBAL CHANGE RESEARCH PROGRAM, CLIMATE SCIENCE SPECIAL REPORT, FOURTH NATIONAL CLIMATE ASSESSMENT | VOLUME I (Donald J. Wuebbles et al. eds.) (2017), https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf (USGCRP Report Volume I); U.S. GLOBAL CHANGE RESEARCH PROGRAM, FOURTH NATIONAL CLIMATE ASSESSMENT, VOLUME II IMPACTS, RISKS, AND ADAPTATION IN THE UNITED STATES (David Reidmiller et al. eds.) (2018), https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf (USGCRP Report Volume II).

166 IPCC Report at SPM-5 to SPM-10.

167 USGCRP Report Volume II at 73-75.

168 See, e.g., USGCRP Report Volume II at 99 (describing accelerating flooding rates in Atlantic and Gulf Coast cities).

- The decade of 2010 through 2017 has been warmer than any previous decade since 1920 for average daily maximum and average daily minimum temperature;
- since 1960, there have been lower numbers of days above 95 degrees F compared to the pre-1960 period but during the 2010's the number of nights above 75 degrees F has been nearly double the average over 1901 – 1960. The length of the freeze free season was 1.5 weeks longer on average in the 2010s compared to any other historical period on record;
- number of days with 3 or more inches of rain has been historically high over the past 25 years. The 1990s, 2000s, and 2010s rank first, third and second, respectively in number of events;
- summers have been either increasingly dry or extremely wet, depending on location;
- due to a combination of sea level rise and soil subsidence, approximately 2,006 square miles of land has been lost in Louisiana between 1932 and 2016, or about 23 square miles per year; and
- in southeast Louisiana, relative sea level is rising at a rate of 1 to 3 feet per 100 years.

The USGCRP'S Fourth Assessment Report notes the following projections of climate change impacts in the Project region (Southeast US) with a high or very high level of confidence¹⁶⁹ (USGCRP, 2018):

- climate models project nighttime temperatures above 75 degrees Fahrenheit and daytime maximum temperatures above 95 degrees Fahrenheit become the summer norm. Nights above 80 degrees Fahrenheit and days above 100 degrees Fahrenheit, which are now relatively rare, would become common;
- lowland coastal areas are expected to receive less rainfall on average, but experience more frequent intense rainfall events followed by longer drought periods;
- coastal areas along the Gulf of Mexico are flat; therefore, expected sea level rises may cause inundation in certain low-lying areas;
- drought and sea level rise will create stressful conditions for coastal trees that are not adapted to higher salinity levels;
- other coastal species may also be stressed by sea level rise and warmer temperatures, prompting migration out of the area; and
- tropical storms and hurricanes may become more intense.

It should be noted that while the impacts described above taken individually may be manageable for certain communities, the impacts of compound events (such as simultaneous heat and drought, wildfires associated with hot and dry conditions, or flooding associated with high precipitation on top of saturated soils) can be greater than the sum of the parts.¹⁷⁰

The GHG emissions associated with construction and operation of the Project were identified and quantified in section 4.11.1. Project construction would result in 547,314 tpy of CO₂e emissions (equivalent to 496,515 metric tpy of CO₂e), inclusive of pipeline, terminal, barge, and commissioning emissions.

¹⁶⁹ The report authors assessed current scientific understanding of climate change based on available scientific literature. Each “Key Finding” listed in the report is accompanied by a confidence statement indicating the consistency of evidence or the consistency of model projections. A high level of confidence results from “moderate evidence (several sources, some consistency, methods vary and/or documentation limited, etc.), medium consensus.” A very high level of confidence results from “strong evidence (established theory, multiple sources, consistent results, well documented and accepted methods, etc.), high consensus.” <https://science2017.globalchange.gov/chapter/front-matter-guide/>.

¹⁷⁰ USGCRP Report Volume II.

Emissions of GHGs are typically expressed in terms of CO₂e.¹⁷¹ Direct GHG emissions from the operation of the Project would result in an annual increase of CO₂e emissions of about 3,559,091 tpy (equivalent to 3,228,754 metric tpy). The estimate for operational emissions is based on the facilities being operated at maximum capacity for 365 days per year, 24 hours per day. Additionally, the estimate includes fugitive and vented blowdown emissions and mobile emissions sources, including berthed vessels, auxiliary engines of vessels in transit, and maintenance dredging. Construction and operation of the Project would increase the atmospheric concentration of GHGs, in combination with past and future emissions from all other sources globally and would contribute incrementally to future climate change impacts. To assess impacts on climate change associated with the Project, Commission staff considered whether it could identify discrete physical impacts resulting from the Project's GHG emissions or compare the Project's GHG emissions to established targets designed to combat climate change.

To date, Commission staff have not identified a methodology to attribute discrete, quantifiable, physical effects on the environment resulting from the Project's incremental contribution to GHGs. Without the ability to determine discrete resource impacts, Commission staff are unable to assess the Project's contribution to climate change through any objective analysis of physical impact attributable to the Project. Additionally, Commission staff have not been able to find an established threshold for determining the Project's significance when compared to established GHG reduction targets at the state or federal level. This EIS is not characterizing the Project's GHG emissions as significant or insignificant because the Commission is conducting a generic proceeding to determine whether and how the Commission will conduct significance determinations going forward.¹⁷²

To provide context for the Project emissions on a national level, we compare the Project's GHG emissions to the total GHG emissions of the United States as a whole. At a national level, 5,222.4 million metric tons of CO₂e were emitted in 2020 (inclusive of CO₂e sources and sinks; EPA, 2021). The construction-related emissions of the Project could potentially increase CO₂e emissions based on 2020 levels by 0.01 percent. The operational emissions could potentially increase CO₂e emissions based on the 2020 national levels by 0.06 percent.

To provide context of the Project emissions on a state level, we compare the Project's GHG emissions to the state GHG inventories. At the state level, energy related CO₂ emissions in Louisiana were 194.9 million metric tons of CO₂e in 2019 (EIA, 2022). GHG emissions in Louisiana would result from the Project's direct construction and operational emissions; no end-use is expected in Louisiana as the natural gas would be exported from the United States. Construction emissions from the Project could potentially increase CO₂e emissions based on the Louisiana 2019 levels by 0.3 percent and Project operations could potentially increase emissions by 1.7 percent.

The state of Louisiana has established executive targets in 2020 to reduce net GHG emissions 26 to 28 percent by 2025 and 40 to 50 percent by 2030, compared to 2005 levels. The targets also aim for net-zero GHG emissions by 2050. As indicated in table 4.11.1-7, direct GHG emissions from the operation of the Terminal would result in an annual increase in CO₂e emissions of about 3,559,091 tpy (equivalent to

171 GHGs are converted to CO₂e by means of the global warming potential; the measure of a particular GHG's ability to absorb solar radiation; and its residence time within the atmosphere, consistent with the EPA's established method for reporting GHG emissions for air permitting requirements that allows a consistent comparison with federal regulatory requirements.

172 See Order on Draft Policy Statements, 178 FERC ¶ 61,197 (2022).

3,228,754 metric tpy). This would represent 3.2 percent of Louisiana's 2030 projected GHG emission levels, assuming the reductions from 2005 levels summarized above.¹⁷³

The social cost of GHGs is an administrative tool intended to quantify, in dollars, estimates of long-term damage that may result from future emissions of CO₂, nitrous oxide, and methane. We include a disclosure of the social cost of GHGs associated with the reasonably foreseeable emissions from the Project using the calculations described below. We note there is pending litigation challenging federal agencies' use of the Interagency Working Group (IWG) on Social Cost of Greenhouse Gases' interim values for calculating the social cost of GHGs.¹⁷⁴ In addition, the CEQ noted that it is working with representatives on the GHG IWG to develop additional guidance regarding the application of the Social Cost of Carbon tool in federal decision-making processes, including in NEPA analyses.¹⁷⁵ The Commission has not determined which, if any, modifications are needed to render the Social Cost of Carbon tool useful for project-level analyses.¹⁷⁶

As both EPA and CEQ participate in the IWG, we used the methods and values contained in the IWG's current draft guidance but note that different values would result from the use of other methods.¹⁷⁷ Accordingly, we calculated the social cost of CO₂, nitrous oxide, and methane. For the analysis, we assumed discount rates of 5 percent, 3 percent, and 2.5 percent,¹⁷⁸ assumed the Project would begin service in 2026, and, based on Commonwealth's statements that the Terminal would have a 30-year operational life,¹⁷⁹ that the Project's operational emissions would be at a constant rate throughout 2050, the last year of values provided by the IWG.¹⁸⁰ Noting these assumptions, the emissions from construction and operation of this Project up to 2050 are calculated to result in a total social cost of GHGs equal to \$909,939,824, \$3,590,938,694, and \$5,481,667,409, respectively (all in 2020 dollars).¹⁸¹ Using the 95th percentile of the

173 Louisiana's CO₂ emissions in 2005 were 201.9 million metric tons; therefore, we consider the 2025 GHG emission target to be 145.4 million metric tons (assuming a 28 percent reduction) and the 2030 target to be 100.9 million metric tons (assuming a 50 percent reduction).

174 *Missouri v. Biden*, 8th Cir. No. 21-3013; *Louisiana v. Biden*, No. 21-cv-1074-JDC-KK (W.D. La.). On February 11, 2022, the U.S. District Court for the Western District of Louisiana issued a preliminary injunction limiting federal agencies' employment of estimates of the social costs of GHGs and use of the IWG's interim estimates. On March 16, 2022, the U.S. Court of Appeals for the Fifth Circuit issued a stay of the district court's preliminary injunction, finding among other things that the federal agency respondent's continued use of the interim estimates was lawful. *Louisiana v. Biden*, No. 22-30087 (5th Cir. Mar. 16, 2022).

175 Council on Environmental Quality's May 27, 2021 Comments filed in Docket No. PL18-1-000, at 2.

176 See Order Issuing Certificates and Approving Abandonment, 178 FERC ¶ 61,199 (2022) at fn 141.

177 *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990*, Interagency Working Group on Social Cost of Greenhouse Gases, United States Government, February 2021 (IWG Interim Estimates Technical Support Document).

178 IWG Interim Estimates Technical Support Document at 24. To quantify the potential damages associated with estimated emissions, the IWG methodology applies consumption discount rates to estimated emissions costs. The IWG's discount rates are a function of the rate of economic growth where higher growth scenarios lead to higher discount rates. For example, IWG's method includes the 2.5% discount rate to address the concern that interest rates are highly uncertain over time; the 3% value to be consistent with Office of Management and Budget Circular A-4 (2003) and the real rate of return on 10-year Treasury Securities from the prior 30 years (1973 through 2002); and the 5% discount rate to represent the possibility that climate-related damages may be positively correlated with market returns. Thus, higher discount rates further discount future impacts based on estimated economic growth. Values based on lower discount rates are consistent with studies of discounting approaches relevant for intergenerational analysis. *Id.* at 18-19, 23-24.

179 See accession no. 20220624-5157

180 Tables A-1, A-2, and A-3 in the *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990* provide the cost per year for each GHG through 2050.

181 The IWG draft guidance identifies costs in 2020 dollars. *Id.* at 5 (Table ES-1).

social cost of GHGs using the 3 percent discount rate,¹⁸² the total social cost of GHGs from the Project is calculated to be \$ \$10,924,865,401 (in 2020 dollars).

We received comments from the public stating that indirect, upstream, and downstream greenhouse gas emissions constitute the vast majority of emissions that would be caused by the Project and therefore FERC should analyze these emissions.. The courts have explained that because the authority to authorize LNG exports rests with DOE, NEPA does not require the Commission to consider the upstream or downstream GHG emissions that may be indirect effects of the export itself when determining whether the related LNG export facility satisfies section 3 of the NGA.¹⁸³ Nevertheless, NEPA requires that the Commission consider the direct GHG emissions associated with a proposed LNG export facility.¹⁸⁴

We also received multiple comments from the public stating that FERC failed to take a hard look at the technological and economic feasibility of reducing the Project's emissions through carbon capture and sequestration (CCS), or even to explain whether FERC agreed with Commonwealth's assertion that CCS is economically infeasible in part due to a lack of existing infrastructure to support CCS. We received another comment stating that CCS is not a feasible solution to address climate change due to it being prohibitively expensive, energy-intensive, and unproven at scale and because it would promote additional fossil fuel production.

The DOE is a cooperating agency on this Project. DOE has conducted research and development to enhance technical understanding and reduce cost for capturing and safely using or storing CO₂. DOE has awarded funding to help projects working to accelerate the deployment of Carbon Capture Utilization and Sequestration. In implementing the Bipartisan Infrastructure Law, DOE is pursuing further advancements in all aspects of Carbon Capture Utilization and Sequestration.

To evaluate the feasibility of CCS on this Project, Commonwealth provided a BACT Analysis, which reviewed the feasibility of implementing carbon capture on this Project.¹⁸⁵ Carbon capture involves CO₂ capture, CO₂ transport, and CO₂ sequestration. CO₂ capture can be accomplished through amine absorption technology or steam methane reforming. CO₂ capture through amine absorption is feasible based on physical, chemical, and engineering principals, while steam methane reforming is not feasible. As Sierra Club notes, Commonwealth is proposing an amine-based absorber system that is essentially equivalent to that used for carbon capture for pipeline pretreatment, which is amenable to capture. The Project is therefore technically able to capture CO₂. Commonwealth also states in their BACT analysis that although CO₂ transport is feasible, there are no CO₂ sequestration facilities beneath the Gulf of Mexico seabed in Cameron Parish or near the Project site. Nearby projects, such as the Gulf Coast Sequestration Project (onshore in southwest Louisiana between near the Sabine River on the Louisiana-Texas border and west of Lake Charles), the Hackberry Carbon Sequestration project (proposed for construction approximately 16 miles northwest of the Project and with the business plan of capturing, transporting, and storing CO₂ primarily from Cameron LNG), and the Denbury Green Pipeline (a CO₂ pipeline, which is 37 miles from the Project) are still in development.. Therefore, Commonwealth states that due to a lack of sequestration infrastructure, carbon capture and sequestration are not feasible for the Project.

¹⁸² This value represents "higher-than-expected economic impacts from climate change further out in the tails of the [social cost of CO₂] distribution." *Id.* at 11. In other words, it represents a higher impact scenario with a lower probability of occurring.

¹⁸³ See *Freeport*, 827 F.3d at 46-47; see also *Sierra Club v. FERC*, 867 F.3d 1357, 1373 (D.C. Cir. 2017) (*Sabal Trail*) (discussing *Freeport*).

¹⁸⁴ See *Freeport*, 827 F.3d at 41, 46.

¹⁸⁵ See appendix F within the Agency Correspondence under accession no. [20210930-5255](#).

Commonwealth's position notwithstanding, we note that other LNG projects in the general Project vicinity, such as Rio Grande LNG, LLC (Docket No. CP22-17) in Texas and Venture Global's CP2 LNG project (Docket No. CP22-21), which would be constructed about 1.5 miles from the proposed Commonwealth LNG terminal, have proposed carbon capture and sequestration as feasible for their projects. To-date Rio Grande LNG has not provided details regarding the process it would use to implement CCS at its project. Venture Global states that CO₂ would be routed from its acid gas removal unit for transport and sequestration to an offshore platform approximately 3 miles south of the project site in State of Louisiana waters.¹⁸⁶ Venture Global states the pipeline alignment, platform location, and well location are in the siting stage of project development. Without additional information, we are unable to evaluate the feasibility of CP2 LNG's sequestration site for the Commonwealth Project.

186 See accession no. 20220722-5160.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS OF THE ENVIRONMENTAL ANALYSIS

The conclusions and recommendations in this final EIS are those of the FERC environmental staff. Our conclusions and recommendations will be further developed with input from the COE, USCG, DOE, DOT, EPA, FWS, and NMFS, as cooperating agencies. However, the cooperating agencies will present their own conclusions and recommendations in their respective Records of Decision or determinations. The cooperating agencies can adopt this EIS consistent with 40 CFR 1501.3 if, after an independent review of the document, they conclude that their requirements have been satisfied. Otherwise, they may elect to conduct their own supplemental environmental analyses.

We conclude that construction and operation of the Commonwealth LNG Project would result in limited adverse environmental impacts. Most adverse environmental impacts would be temporary or short-term during construction and operation, but long-term and permanent environmental impacts would also occur as part of the Project. As part of our analysis, we developed specific mitigation measures that are practical, appropriate, and reasonable for the construction and operation of the Project. We are, therefore, recommending that these mitigation measures be attached as conditions to any authorization issued by the Commission. Implementation of our recommended mitigation and the mitigation and minimization measures proposed by Commonwealth would avoid or reduce impacts to mostly less than significant levels. This determination is based on our review of information filed by Commonwealth, and further developed from data requests, scoping, literature research, and contacts with federal agencies. A summary of the Project impacts and our conclusions are presented below by resource.

5.1.1 Geologic Resources

The Project exists within a limited range of geologic conditions and resources. The topography at the Terminal site is primarily flat, ranging from 0 to 8 feet NAVD. Topographical relief throughout the site is limited to chenier ridges and shallow wetland ponds. To construct the Terminal in accordance with federal safety regulations, Commonwealth would raise site topographic elevations to between 5 and 8 feet NAVD using general and engineered fill sourced off-site from state-approved locations free of contamination. The Pipeline and associated aboveground facilities would be constructed inland with the same topography and geologic characteristics as the Terminal (though no chenier ridges are present along the Pipeline right-of-way). The topography of the Pipeline right-of-way is flat, with topographical relief limited to shallow wetland ponds and ditches, consisting of Holocene clay and silt that are underlain by Pleistocene-age soils encountered 25 feet to 35 feet below ground surface.

Oil and natural gas resources are prevalent in Louisiana and offshore of its coastline. However, natural gas or unspecified product wells within 0.25 mile of the Project site are dry and plugged, plugged and abandoned, or inactive. The Project would not affect active mining or nonfuel mineral resources would during construction or operation.

Generally, the potential for geologic hazards such as earthquakes, soil liquefaction, landslides, or fault-induced subsidence to significantly affect construction or operation of the Project is low. The potential for impacts on the Terminal due to geologic hazards discussed in the Reliability and Safety section. The potential impacts on the Pipeline are discussed here. Increased storm activities, shortage of sediment supply, and sea level rise have made shoreline erosion a major concern in southern Louisiana. We received numerous scoping comments regarding the potential susceptibility of the Project to coastal erosion. The Project could potentially be affected by erosion of the coast of the Gulf of Mexico immediately south of the Terminal and erosion of the western shoreline of the Calcasieu Ship Channel on which the Terminal would be constructed. The average shoreline erosion rate in Cameron Parish was 15 feet per year between 1998

and 2009. However, the proposed southern edge of the Terminal is more than 900 feet from the Gulf of Mexico shoreline and the Pipeline would be more than 0.5 mile inland. Therefore, even at the erosion rate of 30 feet per year, the Pipeline would not be affected by erosion of the Gulf of Mexico shoreline within the 30-year design lifespan of the Project.

Vessel wakes and propeller thrust from the large commercial vessels that transit the Calcasieu Ship Channel daily can exacerbate the shoreline erosion of unprotected portions of the riverbank, which occurs naturally due to winds and tides. However, stabilizing and armoring the shoreline with seawalls and riprap can moderate such impacts. The northern extent of the Terminal site shoreline is currently protected by a concrete bulkhead, and the southern extent is protected by an existing riprap revetment that extends to the mouth of the Calcasieu River and connects to the western Calcasieu River Jetty. Commonwealth would stabilize the shoreline of the marine facility, the only area that currently has exposed shoreline, with a sheet pile bulkhead and riprap. Consequently, the full extent of the Terminal site shoreline on the Calcasieu Ship Channel would be protected from erosion. The portion of the Pipeline closest to both the Gulf of Mexico and Calcasieu Ship Channel shoreline is where the Pipeline would enter the Terminal. This portion of the Pipeline would be no closer than approximately 0.5 mile from either shoreline and therefore would not be susceptible to impacts from coastal erosion during the lifespan of the Project.

The full extent of the proposed 3.0-mile-long pipeline would be buried, protecting it from direct physical forces related to waves, wind, and floodwaters. In areas of open water or where the right-of-way is generally inundated, the Pipeline would be fitted with a concrete coating as a buoyancy countermeasure. This would further protect the Pipeline from the effects of floodwaters.

Commonwealth has proposed to use the HDD method to cross Highway 27/82 and a roadside ditch immediately adjacent to the highway. The total distance of the HDD would span approximately 1,940 feet. Commonwealth's risk assessment of the hydraulic fracture and drilling fluid surface release potential for the Highway 27/82 HDD indicates that, based on the proposed depth of cover, the diameter of the final reamed hole, and the low shear-strength fine-grained soils, typical of coastal marsh environments, that are expected to be present along the HDD alignment, there is a "moderate" risk of an inadvertent release under Highway 27/82 and subsequent highway settlement on the order of one inch. For the remainder of the HDD alignment, including the roadside ditch waterbody adjacent to Highway 27/82, Commonwealth's assessment indicates the risk of an inadvertent release is "high" to "very high." In response to our recommendation in the draft EIS, Commonwealth filed a revised *HDD Contingency Plan*, which provides a detailed approach for reducing the potential for inadvertent releases along the HDD alignment and a detailed plan for responding to inadvertent releases in wetland and waterbodies. Additionally, Commonwealth is engaging the LDOTD to develop an alternative plan for crossing Highway 27/82 if an unacceptable amount of settlement beneath Highway 27/82 occurs during construction despite the approaches presented in its revised *HDD Contingency Plan*. To avoid environmental impacts in the event LDOTD requires Commonwealth to cross Highway 27/82 at a different location if settlement beneath the highway is deemed unacceptable, we recommend in section 4.1.5.6 that Commonwealth complete and file with the Secretary an alternative plan for crossing Highway 27/82 that has been developed in consultation with the LDOTD and successfully complete the HDD or alternative plan for crossing Highway 27/82 prior to the start of construction of the remainder of the Pipeline right-of-way.

With implementation of our recommendation and Commonwealth's revised *HDD Contingency Plan*, we conclude that impacts on geological resources would be adequately minimized and the potential for impacts on the Project from geologic hazards also would not be significant.

5.1.2 Soils

The soils of the Project site are relatively uniform. All soils at the Project site are classified as hydric soils with high compaction potential and low to moderate potential to be eroded by water or wind.

Construction of the Terminal would impact 118.8 acres of soils. The impacts on 105.7 acres would be permanent. Construction of the Pipeline would impact 48.4 acres, of which 0.3 acre would be permanent.

Commonwealth assessed the Project site for potentially contaminated sediments. A Phase I Environmental Site Assessment identified fill and dredged material near the north end of the proposed marine facility. Therefore, Commonwealth conducted an Inland Testing Manual Tier I Evaluation, which consists of a comprehensive analysis of existing information and data from field evaluations conducted in the Project area, to assess whether there are known instances of contaminated soils in the Project area. The results of the evaluation indicate there are no known contaminated soils present.

Four locations (13 individual sites) of potential contamination were identified within 0.125 mile of the Terminal; however, none of the sites are within the proposed construction work area and the regulatory status of the sites are such that no further action is required to remediate the locations. Therefore, the Project is not anticipated to be affected by any of the identified sites. Consequently, the Terminal site would not impact contaminated soils and sediments.

If construction activities were to uncover any type of contamination, Commonwealth would coordinate with the appropriate agencies, and follow the procedures in its *Unanticipated Contaminated Sediment and Soils Discovery Plan*. We have reviewed this plan and found it acceptable.

All 48.4 acres of soils that the Pipeline would cross are classified as compaction prone. Commonwealth would use low-ground pressure construction equipment and geo-textile fabric or mats during construction to reduce potential rutting and compaction, where appropriate. Commonwealth would implement the FERC's *Plan* and Commonwealth's *Procedures* during construction and restoration of the Pipeline construction right-of-way. Accordingly, the right-of-way would be graded and restored to natural site contours. Restoration would include deep tilling in areas of compaction and Commonwealth would repair rutted areas prior to seeding, mulching, and final revegetation.

Construction and operation of the Project would convert about 106 acres of hydric and compaction-prone soils to industrial/commercial use. This constitutes a permanent, but not significant, impact due to the abundance of similar soil types in the vicinity of the Project. Based on the overall soil conditions present in the Project area and the Project's proposed construction and restoration methods, we conclude that construction and operation of the Project would not significantly alter the soils of the region.

5.1.3 Water Resources

5.1.3.1 Groundwater Resources

Although the Project is within the Chicot aquifer system (an EPA designated sole-source aquifer), its location is within a coastal area that does not provide recharge to any major Louisiana freshwater aquifers; therefore, we conclude the Project would not affect the availability or quality of water within the sole-source aquifer. Additionally, Commonwealth conducted several Phase I Environmental Site Assessments to gauge the potential for groundwater contamination in the vicinity of the Project. The results of these extensive database searches indicate no evidence of groundwater contamination at or within the vicinity of the Project location.

Project activities with the greatest potential to affect groundwater include excavation, pile installation, potential spills of hazardous materials, and groundwater withdrawals. Excavations for construction have the potential to intercept groundwater, thereby affecting groundwater quality and/or quantity. Although these excavations would generally be shallow (e.g., facility foundation piles driven to approximately 120 feet below ground level), groundwater throughout much of the Terminal site is expected to be at or near the ground surface. Therefore, dewatering may be required during excavation and would

occur in accordance with the FERC *Plan* and Commonwealth's *Procedures*. A potential impact associated with driven piles is the cross contamination of lower permeable aquifer zones through downward vertical seepage from one layer to another. The piles proposed for the Project facilities are 80 to 120 feet long and would not penetrate the confining unit, which is greater than 200 feet under the Project site. At this depth, the piles would stay within the upper (shallow) permeable zone of the Chicot aquifer. Subsurface materials above the aquifer consist of clay, silty clay, and sandy clay, which reduce permeability and limit both vertical and horizontal water flow. Due to the proposed depth of pile foundations and the characteristics of the material above the Chicot aquifer, we conclude the potential for cross-contamination of groundwater is low.

An accidental release of hazardous substances, such as fuels, lubricants, and coolants while constructing or operating the Terminal could potentially impact groundwater. Commonwealth would construct and operate the Terminal in accordance with its *SPAR Plan*. The *SPAR Plan* includes planning and measures for spill avoidance; general BMPs, including refueling procedures, lists of required spill response equipment to be kept on-site, and proper management of typical fuels, lubricants, and hazardous materials management; general spill response procedures; reportable spill response procedures; cleanup requirements; and waste storage and disposal requirements. We have reviewed the *SPAR Plan* and found it to be acceptable.

Commonwealth would use surface water from the Calcasieu Ship Channel for hydrostatic testing of Project components such as the LNG storage tanks and the pipeline. Commonwealth would use municipally sourced water from Water District 10 for dust control and needs for fresh and potable water during construction and operation. Water District 10 has informed Commonwealth that it has the infrastructure and water availability to provide water to the Project site without affecting other users in the district.

Overall, we conclude that significant impacts on the groundwater resources underlying the Terminal would not occur due to a lack of active public or private drinking water supply wells within 150 feet of the site's construction work area; construction of the proposed Project would avoid crossing aquifer confining layers; and surficial mitigation measures that Commonwealth would implement in the event of a hazardous material spill. Further, the Terminal site is underlain by multiple strata of dense clay content, which provide a restrictive layer to slow or prevent the downward migration of surface and near-surface waters or contaminants, thereby providing a natural protective barrier to groundwater quality.

5.1.3.2 Surface Water

Surface water resources associated with the Project include the Calcasieu Ship Channel, two unnamed waterbodies within the 118.8-acre Terminal site workspace, and five unnamed waterbodies along the Pipeline right-of-way. The primary impacts on surface waters related to construction and operation of the Terminal would result from dredging activities, marine traffic, stormwater runoff, water use, hydrostatic testing, and accidental spills or other releases of hazardous substances.

To create a recessed berthing area for the marine facility, Commonwealth would dredge the Calcasieu Ship Channel at the Terminal location using a barge-mounted cutterhead suction dredge. Commonwealth would dredge about 1.73 million cubic yards of material during construction and about 152,000 cubic yards from a 47-acre area during each maintenance dredge. During construction and the subsequent maintenance dredges, the dredged material would be primarily transported via floating pipeline to an approved DMPA. In-water dredging would increase the rates of turbidity and sedimentation in the Calcasieu Ship Channel and the DMPA. In April 2021, Commonwealth conducted Project site-specific turbidity modeling to estimate the potential levels of water column turbidity that could occur during construction and maintenance dredging. The modeling report indicates maximum turbidity concentrations associated with dredging would range, depending on the velocity of the tidal flow during dredging, from

approximately 122 to 128 mg/L adjacent to the cutter head; 3 to 51 mg/L at 1 meter above the cutter head; and 0.1 to 10 mg/L at 2 meters above the cutter head. Background turbidity concentrations in the Calcasieu River are estimated to range between 10 and 45 mg/L. Based on dredging literature published by NMFS and Commonwealth's site-specific modeling, we conclude the proposed dredging at the Terminal site would increase suspended sediment and turbidity levels at the Terminal site in the immediate vicinity of the dredging activity; however, sediment and turbidity levels would be indistinguishable from ambient water conditions outside of a small radius surrounding the dredge cutterhead. Therefore, we conclude that dredging impacts on surface waters at the Project site would be temporary and not significant.

Marine traffic associated with construction and operation of the Terminal could impact surface water resources as a result of ship movements, including propeller use, wave action, and ballast water exchanges. Throughout construction of the Project, general cargo carrier vessels, barges, and support vessels would deliver heavy equipment and materials to the Terminal. The marine construction fleet would likely include vessels such as dredge barges, heavy lift cranes, derrick crane barges, deck barges, tugs, and support vessels. The support vessels anticipated include booster pump barges, tender boats, work barges, material barges, fuel barges, personnel shuttles, and survey vessels. Commonwealth estimates an average of seven supply barges per week would call at the Terminal site during construction. Commonwealth anticipates an average of three LNG carriers per week (156 LNG carriers per year) would call on the Terminal during operations.

Increased marine traffic related to the Project could impact water quality through an increased likelihood of shoreline erosion due to vessel wakes. Shoreline stabilization to prevent erosion related to vessel wakes would be achieved using a combination of sheet piles and rip rap along the entire Calcasieu Ship Channel-facing shoreline within the LNG Facility. Areas adjacent to the proposed Terminal are already armored for erosion. Use of the channel by barges and support vessels to deliver materials during construction of the Terminal facilities would be consistent with the use of this active shipping channel, and associated impacts on water quality would be minor.

The LNG carriers and some construction delivery vessels would discharge ballast water into the Calcasieu Ship Channel during LNG loading in accordance with federal regulations. USCG regulations require that all vessels that would discharge ballast water into U.S. waters must either ensure the ballast water meets the ballast water discharge standard as defined in 33 CFR 151.2030(a), be fitted with approved ballast water treatment systems (as described in 33 CFR 151.2025(a)(3)), or ballast exclusively with water from a U.S. public water system (33 CFR 151.2035). The ballast water discharged at the LNG carrier berth would be composed mainly of Gulf of Mexico ocean water. Because the proposed Terminal site and berthing area are within the lower Calcasieu River Ship Channel (about 0.2 mile from the Gulf of Mexico), potential differences in salinity, dissolved oxygen, and pH resulting from ballast water discharge are expected to be minor and may not be measurable under normal tidal cycles. Furthermore, Commonwealth would ensure any visiting vessels possess documentation to demonstrate compliance with ballast water regulations and implement BMPs prior to allowing any ballast water to be discharged at the LNG carrier berth. Therefore, we conclude that significant impacts on surface waters would not occur as a result of ballast water discharge.

Commonwealth would grade the Terminal site such that rainwater runoff would flow from north to south into a constructed stormwater retention and settling pond at the south end of the Terminal. Commonwealth would divert runoff from process equipment areas into drainage piping leading to oil-water separators to remove hydrocarbons from the runoff prior to pumping it into the retention and settling pond. Commonwealth would subsequently pump stormwater from the retention pond over the Terminal's storm protection wall and into the Calcasieu Ship Channel. Given that the stormwater retention system is designed to accommodate significant storm events and minimize erosion, we conclude impacts from stormwater runoff at the Terminal would be minor. Further, Commonwealth would construct its stormwater system to be in compliance with LPDES permit conditions.

Commonwealth would use surface water from the Calcasieu Ship Channel for LNG storage tank hydrostatic testing. Hydrostatic testing of the LNG storage tanks would require about 9.7 million gallons of water. The volumetric flow of the Calcasieu Ship Channel is approximately 115 cubic meters per second and water for hydrostatic testing would be withdrawn at a rate of less than 0.23 cubic meters per second. The anticipated water withdrawal is estimated at about 0.2 percent of the volumetric flow of the Calcasieu River. Withdrawals would be only as needed, on an infrequent basis and only during construction. Therefore, we conclude the withdrawal of water from the Calcasieu Ship Channel for hydrostatic testing would have minimal impacts on surface water.

Construction and operation of the Terminal, as well as marine traffic to and from the Terminal, have the potential to adversely impact water quality in the event of an accidental release of a hazardous substance such as fuel, lubricants, coolants, or other material. Commonwealth would implement the measures outlined in the FERC's *Plan* and Commonwealth's *Procedures* to minimize the likelihood of a spill and would implement its *SPAR Plan* in the event of a spill. Additionally, LNG carriers are required to develop and implement a Shipboard Oil Pollution Emergency Plan (SOPEP), which includes measures to be taken when an oil pollution incident has occurred, or a ship is at risk of one. Commonwealth would further minimize the risk of a spill by implementing general preventative BMPs, including personnel training, equipment inspection, secondary and spill containment structures for fuels, vehicles, or equipment, and refueling procedures.

Commonwealth would use open-cut methods to install the Pipeline across the three major waterbodies along the right-of-way and HDD methods for the crossings of the two intermediate waterbodies. Commonwealth has also proposed to repair an existing but hurricane-damaged bridge to cross an intermediate waterbody at MP 2.9 as part of its temporary access road to transport equipment to the Pipeline HDD exit point. Crossing the waterbodies using open-cut methods and repairing the damaged bridge for the access road would cause temporary increases in sediment and turbidity and risk spills of hazardous liquids within the waterbodies. Commonwealth would implement measures outlined in its *SPAR Plan* and *Procedures* to minimize the potential impacts of sediment and spills of hazardous materials in waterbodies. Crossings using HDD methods would reduce the potential for impacts. However, use of the HDD method could result in an inadvertent release of drilling fluids in the waterbodies, which could temporarily impact water quality. Commonwealth would follow protocols in its revised *HDD Contingency Plan* that include a detailed approach for responding to inadvertent surface releases of drilling fluids in the waterbodies under which the HDD would pass..

Construction and operation of the Project would impact water quality within the vicinity of the Project resulting from dredging, maintenance dredging, marine traffic, stormwater runoff, and pipeline waterbody crossings. However, through implementation of Commonwealth's *Procedures*, *SPAR Plan*, revised *HDD Contingency Plan* and general BMPs, potential construction and operation impacts on surface waters would be adequately minimized and temporary or avoided and would not be significant.

5.1.4 Wetlands

A total of 95.9 acres of wetlands would be impacted by construction of the Terminal, of which 89.6 acres would be permanently impacted for operations. The wetlands that would be permanently impact include EEM (65.8 acres), EFO (14.3 acres), and ESS (9.5 acres) wetlands. Additionally, 6.3 acres would be temporarily impacted for a construction and laydown area within EEM wetlands. Construction of the Pipeline would disturb 43.6 acres of wetlands, all EEM communities, of which 0.3 acre would be permanently impacted by aboveground facilities. Ninety percent of the Pipeline right-of-way would cross wetlands and the other 10 percent of the right-of-way would cross open water (drainage ditches and ponds). Commonwealth would construct one temporary access road at the south end of the Pipeline right-of-way and otherwise use uses low-ground-pressure equipment and equipment mats during construction.

We received multiple comments from the public expressing concern that construction of the Terminal would negatively alter surface water flow of the wetlands surrounding the Project site. As part of its application to the FERC, Commonwealth conducted a Hydraulic Impact Analysis study to determine how best to maintain water flow through the wetlands. Based on the findings of this study, Commonwealth proposes to construct a culvert extending from the west side of the Terminal, along its southern edge, and into the Calcasieu River. The preliminary design of the structure includes a variable crest weir at its outlet at the Calcasieu River that would allow it to maintain the natural drainage patterns of the existing wetlands. Further, Commonwealth would design the outlet structure to allow tidal inflow into the culvert and surrounding wetlands (i.e., the structure would not contain a backflow prevention device at the outlet) and would contain continuously open fish bays/slots that would allow aquatic fauna to access the culvert and surrounding wetlands. Commonwealth would consult with state and federal agencies, including OCM, NMFS and the COE, to confirm the final design of the structure.

Commonwealth would restore the 6.3 acres of temporarily impacted wetlands at the Terminal site by planting native wetland vegetation in accordance with Commonwealth's *Procedures* and *Workplace Restoration Plan*. Commonwealth proposes to construct the Pipeline using a 110-foot-wide construction right-of-way. After construction, Commonwealth proposes to maintain access to a 3.5-foot-wide permanent right-of-way. Commonwealth would restore the entire Pipeline right-of-way (i.e., including the permanent right-of-way) with native wetland vegetation in accordance with Commonwealth's *Procedures* and revised *Workplace Restoration Plan*. Commonwealth would monitor and record the success of wetland revegetation annually for the first three years following construction. If revegetation does not meet the prescribed restoration criteria specified in Commonwealth's *Procedures* within three years of construction, Commonwealth would develop a remedial revegetation and monitoring plan, in consultation with a professional wetland ecologist, to continue revegetation efforts and file a report annually documenting progress until revegetation is successful.

Commonwealth would use the HDD method to cross Highway 27/82 and adjacent waterbodies. As noted above, Commonwealth's revised HDD risk assessment indicated the likelihood of an inadvertent release of drilling fluids into the EEM wetlands along the HDD alignment is "high" to "very high." Commonwealth would follow protocols in its revised *HDD Contingency Plan*, which provides a detailed approach for reducing the potential for an inadvertent release of drilling mud, a detailed contingency plan for responding to an inadvertent release of drilling mud in wetland habitat, and a plan to mitigate for any adverse impacts on wetlands.

We conclude that through implementation of the measures in Commonwealth's revised *Workspace Restoration Plan*, Project-specific *Procedures*, and revised *HDD Contingency Plan*, construction impacts on wetlands related to the Terminal construction and laydown area and Pipeline construction would be short term and not significant. Commonwealth would comply with the CWA and mitigate for permanent impacts on 89.9 acres of wetlands through purchase of wetland mitigation bank credits at an amount directed by the COE and OCM. We conclude this would sufficiently offset the overall impacts on wetlands of the United States to less than significant levels.

5.1.5 Vegetation

The primary vegetation communities in the Project area are EEM, ESS, and EFO wetlands with brackish or intermediate salinity. Additionally, during scoping, the FWS and LDWF expressed concern for impacts on chenier communities, which are considered communities of special concern in Louisiana, in the Project area. Cheniers provide storm barriers, limit saltwater intrusion, and provide stopover sites for migratory birds.

The Project would impact 142.0 acres of vegetation (not including open water) during construction, of which 92.4 acres would be permanently impacted during operation. The Terminal would impact 98.4

acres during construction, of which 92.1 acres would remain impacted during operation. The Pipeline would impact 43.6 acres during construction, of which 0.3 acre would remain impacted during operation. The majority of the construction impacts would occur in EEM wetlands (82 percent). The remaining vegetation types (EFO wetland and cheniers, ESS wetland, and open) would each comprise 10 percent or less of the construction impacts. Operation would primarily impact EEM wetlands (72 percent), EFO wetlands and cheniers (16 percent), and ESS wetlands (10 percent). EEM wetlands would comprise the entirety of the temporarily impacted vegetation communities. Commonwealth would restore the temporarily impacted vegetation as described in the wetlands section. Commonwealth would comply with the CWA and mitigate for the permanent loss of wetland vegetation through purchase of wetland mitigation bank credits at an amount determined by the COE and OCM. Therefore, we conclude that Project impacts on vegetation resources would be short-term and minor or adequately mitigated.

Commonwealth would use measures outlined in our Plan and Commonwealth's *Procedures and Invasive Species Management Plan* to the minimize risk of invasive species proliferating at the Project site and would monitor disturbed areas for invasive species. Commonwealth has worked with the NRCS and LDWF to establish appropriate restoration seed mixes, weed and invasive plant treatment methods, and monitoring protocols. Additionally, Commonwealth would also implement the restoration measures in its *Workspace Restoration Plan*, which includes planting and monitoring a mixture of gulf cordgrass, smooth cordgrass, saltmeadow cordgrass, and saltgrass seedlings at 36-inch spacing within the temporary construction and laydown area. Eight chenier areas were identified within the Project area, all within the Terminal site. Seven of the chenier areas displayed wetland soil and hydrology characteristics and were also considered forested marsh. One chenier area was in an area identified as upland. Due to the similarities in vegetation composition between the wetland and upland chenier areas, all chenier areas were grouped together in the forested marsh/chenier vegetation class used for impact calculations. Permanent impacts from the Terminal would total 13.3 acres of chenier and represent a small portion of the overall surrounding chenier community. A total of 23.6 acres of existing chenier would remain within the Terminal property. The LDNR reports over 2,000 acres of existing chenier habitat in coastal southwest Louisiana. LDWF recommended that Commonwealth restore and preserve unaffected chenier habitat in the vicinity of the Project to mitigate for unavoidable permanent impacts on chenier habitat at the Project site. Accordingly, Commonwealth has committed to eradicating feral hogs from the Terminal property and installing a hog exclusion fence around the perimeter of the Terminal property and the 23.6 acres of chenier habitat that would not be affected by construction. Commonwealth would preserve the chenier areas on the Terminal property for the life of the Project (anticipated to be 30 years). The relatively small permanent loss of chenier and the anticipated mitigation would result in a minor overall reduction in acreage, but potentially higher value cheniers within the Project area would be preserved. Therefore, we conclude that Project impacts on cheniers would not be significant.

5.1.6 Wildlife Resources

Wildlife habitats associated with the Project site are dominated by coastal wetlands, scrub/shrub and forested wetlands, areas of open water, cheniers, open land, and beach. The Terminal site consists of each of these habitat types, whereas the proposed Pipeline right-of-way is entirely comprised of EEM wetlands. Generally, these habitat types support a diverse ecosystem that provides nutrients, cover, shelter, and water for a variety of terrestrial and aquatic wildlife species, including waterfowl, wading birds, nesting birds, raptors, mammals, fish, reptiles, and amphibians.

Project impacts on wildlife habitat broadly consist of replacing the vegetated and open water habitat with surfacing materials such as concrete or gravel. Potentially suitable cover, nesting, and foraging habitat for some wildlife species would be reduced due to clearing and removal of vegetation. Individuals of smaller, less mobile wildlife, such as reptiles and amphibians, could be inadvertently killed by construction equipment. More mobile species, such as adult birds and larger mammals, may relocate to similar habitats

nearby when construction activities commence. The permanent reduction in available habitat within the area as well as the influx of individuals to other nearby areas may increase population densities of certain species, resulting in increased inter- and intra-specific competition and reduced reproductive success of individuals.

Other indirect effects on wildlife may include increased noise and light during construction. Construction noise could force individuals to move out of the Project area and expend more energy finding replacement habitat. This disruption of normal behavioral patterns could lead to reduced feeding, increased risk of predation, delayed reproduction, and increased juvenile mortality. Increased lighting associated with Project construction could also result in animal displacement, including the avoidance or abandonment of an area. The level of displacement is dependent on the sensitivity of the species and the surrounding vegetation types. Most of these construction impacts would only last for the duration of construction; however, there would be some displacement resulting from permanent habitat loss.

Operation of the Terminal would also result in increased noise, lighting, and human activity that could disturb wildlife in the area. The potential disturbance to wildlife would be similar as those described for construction. However, much of the wildlife known to be present at the site (e.g., raccoons, nutria, waterfowl) are common species that are habitat generalists (with the notable exception of the eastern black rail) and are generally tolerant of anthropogenic. Other wildlife may be driven away from the site and not return. Impacts on wildlife related to operation of the Pipeline would primarily include periodic noise associated with maintenance vehicles and human activity near the aboveground facilities. However, these impacts would be temporary and infrequent. Therefore, it is anticipated that operational impacts of the Project on wildlife would be minimized to the extent practical and would not have any population level effects on the wildlife.

There are 44 Birds of Conservation Concern species that have been documented in or are probable to occur in the vicinity of the proposed Project. Additionally, the Project location is entirely within the Chenier Plain IBA, one of Louisiana's largest IBAs. The extensive wetlands in this IBA are home to over 360 species of birds, including ducks, egrets, geese, rails, raptors, wading birds, and shorebirds. A small but disproportionately important feature of this IBA is the Louisiana Chenier Plain. As noted above, cheniers provide important stopover habitat for neotropical migratory birds.

Commonwealth would attempt to clear vegetation at the Terminal and Pipeline right-of-way to avoid the migratory bird nesting season (March 1 to July 31). If the construction schedule requires clearing during the migratory bird nesting season, Commonwealth would consult with the FWS regarding appropriate methods to minimize impacts on migratory birds. Additionally, prior to construction, Commonwealth would conduct field surveys for the presence of colonial nesting waterbird rookeries, following FWS and LDWF guidance. Although there are currently no known rookeries in the vicinity of the Project site, if an active rookery is identified, Commonwealth would comply with FWS and LDWF requirements for construction activities during nesting season.

Commonwealth has also committed to implementing FWS-recommended measures to avoid or reduce potential flare impacts on migratory birds during Terminal operations. Commonwealth would follow its *Facility Lighting Plan* to minimize, to the extent feasible for safe operations, light pollution impacts on migratory birds. Given the extent of industrial activities and lighting to the north and east on the Calcasieu Ship Channel, we conclude Commonwealth's proposed flare structures, flaring activities,¹⁸⁷ and artificial lighting at the Terminal would not represent a significant impact on migratory birds.

187 Outside of emergency situations, Commonwealth estimates flaring would be required for approximately 30 days during startup of the Terminal and then for no more than 12 hours during the first year of operation and 6 hours per year in subsequent years.

As noted, Commonwealth has proposed a compensatory wetland mitigation plan that requires replanting temporarily disturbed wetlands and purchasing wetland bank mitigation credits at an amount determined by the COE and OCM. Commonwealth has also proposed eradicating feral hogs from the chenier habitat at the Terminal site that would not be affected by construction and subsequently fencing the chenier habitat to preserve it from human and hog impacts for the life of the Project. The proposed compensatory wetland mitigation would preserve migratory bird habitat, in the form of wetlands, in the general Project vicinity and removing hogs from the cheniers would promote the recovery of an important migratory bird habitat type. Given Commonwealth's proposed mitigation and its commitment to implementing the construction and operation BMPs noted above, we conclude the Project would not represent a significant impact on migratory birds.

5.1.7 Aquatic Resources and Essential Fish Habitat

5.1.7.1 Aquatic Resources

Construction and operation of the Project would impact the estuarine waters of the Calcasieu Ship Channel at the mouth of the Calcasieu River, a tidal slough that flows across the Project footprint from its west side and into the Calcasieu Ship Channel to the east, and tidally influenced wetlands present within the footprint of the Terminal and the Pipeline. Each of these resources likely provides year-round habitat for various aquatic species.

The primary impacts on aquatic resources during construction and operation of the Terminal include those associated with dredging and construction of the marine facility (including pile installation). Impacts on aquatic resources resulting from construction and operation of the Pipeline could include loss or modification of habitat, increased sedimentation and turbidity levels, and alteration of vegetative cover resulting from waterbody crossings; entrainment of small organisms during withdrawal of hydrostatic test water; and introduction of pollutants resulting from inadvertent spills or leaks of hazardous materials.

Dredging would temporarily increase turbidity, and suspended solids within the water column. Increases in turbidity and suspended solids can affect the physiology and behavior of marine organisms. Impacts on aquatic resources due to increased turbidity and suspended solid levels would vary by species; however, the aquatic resources within the Project area are likely accustomed to regular fluctuations in turbidity levels. On this basis, we conclude that impacts on aquatic resources from dredging-related turbidity and sediment resuspension would be localized, temporary, and minor.

Dredging would remove the estuarine bottom sediments used as habitat by some aquatic species. Although the dredging-related impacts would be greatest on the benthic community within the dredging area, impacts on fish and shrimp species, such as red drum and brown and white shrimp, could also occur. However, these impacts are expected to be localized and temporary.

Generally, shallow habitats (less than 60 feet) that frequently experience disturbances from waves, wind, and/or currents typically contain early successional species assemblages that reestablish themselves relatively quickly after a disturbance. Therefore, we conclude that the impacts on the benthic community due to the initial and maintenance dredging of the marine facility would be temporary and minor.

Dredging of the marine facility and subsequently placing the dredge spoils at a non-jurisdictional BUDM site approximately 6 miles northeast of the Project site, within the Cameron Prairie NWR, would temporarily affect 47.0 acres of estuarine mud bottom and estuarine water column at the marine facility and 666.2 acres of tidal intermediate marsh and estuarine soft bottom and estuarine water column through placement of the dredge slurry transport pipeline and deposition of dredged sediment at the BUDM site. The FWS would use the dredged sediment at the BUDM site for restoration of estuarine shallow subtidal habitat, mudflat habitat, and as substrate for restoration of estuarine emergent marsh. Commonwealth has

not proposed to use the placement of the dredged sediment at the DMPA as wetland mitigation under Section 404 of the CWA.

Pile driving would produce underwater noise sufficient to injure and/or alter the behavior of fish, sea turtles, and marine mammals a considerable distance from the point of disturbance. Although existing noise levels in the Calcasieu Ship Channel are generally high, NMFS noted that based on the size of the piles that Commonwealth would be driving the use of noise attenuation devices and pile driving BMPs would be necessary to avoid adverse impacts on aquatic species. Commonwealth has committed to using cushion blocks and bubble curtains around the piles during in-water pile driving activities and would also implement NMFS-recommended BMPs to mitigate noise impacts on aquatic species.

The potential effects of ballast water on water quality are described in the water resources section. Resident species within the Calcasieu Ship Channel are euryhaline and are well adapted to natural spatiotemporal variation in salinity and oxygen levels. This adaptability and the ability to move over a short distance to more suitable conditions minimizes adverse impacts on aquatic resources associated with ballast water discharges. Therefore, we conclude that the impacts on aquatic resources from ballast water discharges associated with the Project would not be significant.

Vessels berthed at the marine facility would also withdraw water from the Calcasieu Ship Channel. Ballast and cooling water intake can cause aquatic organisms to become impinged (i.e., becoming trapped against an intake screen due to the velocity of the intake flow) or entrained (i.e., being pulled through an intake screen and into the cooling water system). Studies indicate each LNG carrier call at the marine facility would result in potential entrainment of less than one-tenth of one percent of the ichthyoplankton population in the Calcasieu Ship Channel. Given the generally high natural mortality rates of eggs and larvae in the water column, we conclude that these impacts would not be significant.

Aquatic resources could be adversely affected by an accidental spill or leak of hazardous materials into or near a waterbody. To minimize impacts on aquatic resources, Commonwealth would implement its *SPAR Plan*, which would minimize the potential for releases to occur and reduce response time and ensure appropriate cleanup if a spill occurred. In addition, LNG carriers are required to develop and implement a SOPEP that include measures to be taken when an oil pollution incident has occurred or a ship is at risk of one. Increased vessel traffic, related to construction and operation of the Project, could impact marine mammals and sea turtles, resulting in an increase in stress, injury, and/or mortality.

Commonwealth would implement FWS-recommended measures to minimize impacts on the West Indian manatee and measures within the NMFS *Vessel Strike Avoidance Measures and Reporting for Mariners* (NMFS, 2008) to minimize impacts on other marine mammals and sea turtles. Based on existing levels of disturbance, the increase in ship traffic would be relatively small, and because of the NMFS-recommended vessel strike avoidance measures that would be communicated by Commonwealth to vessel captains, we have determined that impacts on marine mammals and turtles would not be significant.

The waterbodies that would be crossed by the pipeline are discussed in the Water Resources section. The use of open-cut methods would result in temporary loss or modification of aquatic habitat, increase in sedimentation and turbidity levels, and alteration of vegetative cover. Increased suspended sediment and turbidity levels may cause degradation of benthic and spawning habitat and decreased dissolved oxygen levels within and downstream of the crossing location. This temporary increase in suspended solids would decrease rapidly following the completion of instream activities.

Commonwealth would use the HDD method to cross intermediate waterbodies, which would avoid or minimize impacts on aquatic resources within and adjacent to waterbodies unless an inadvertent release of drilling mud were to occur. Commonwealth would follow its revised *HDD Contingency Plan* that, in part, provides a detailed approach for reducing the potential for an inadvertent release of drilling fluids, a

detailed contingency plan for responding to an inadvertent release in aquatic habitat, and a plan to mitigate for any adverse impacts on aquatic habitat, including EFH.

With implementation of the measures outlined in its Project-specific *Procedures* and revised *HDD Contingency Plan*, Commonwealth would minimize impacts on waterbodies and aquatic resources during pipeline construction. Once construction is complete, streambeds and banks would be restored to their preconstruction conditions and contours to the maximum extent practicable, which would aid in preventing erosion and minimize long-term impacts on aquatic resources. With implementation of the mitigation measures described above, we anticipate that the Project would have minimal and localized impacts on aquatic resources.

5.1.7.2 Essential Fish Habitat

NMFS has emphasized that the aquatic resources potentially affected by the Project, comprising tidal brackish marsh, tidal intermediate marsh, estuarine soft bottom and estuarine water column habitat, and estuarine oyster reef habitat are areas designated as EFH for various life stages of federally managed species. Federal agencies that authorize, fund, or undertake activities that may adversely impact EFH must consult with NMFS. We requested NMFS to consider the draft EIS as our initiation of EFH consultation. Commonwealth has since revised its plans for dredge materials management and we have revised the final EIS accordingly. As such, we are now reinitiating EFH consultation with NMFS with this final EIS and appendix D.

Based on our review of the Project and correspondence from NMFS, we have concluded that construction and operation of the Project could affect EFH for species of shrimp, reef fish, red drum, coastal migratory pelagic fishes, and Atlantic highly migratory species in the Gulf of Mexico. Impacts associated with the Project would occur in the estuarine zones. The habitat types that would be affected are listed below.

- Estuarine emergent marsh: EEM wetlands present at the Terminal site, along the Pipeline right-of-way, and at the DMPA that are hydrologically connected to the Calcasieu River and Calcasieu Lake. Includes tidal brackish marsh and tidal intermediate marsh.
- Soft bottom: the estuarine mud bottom of the Calcasieu River where construction and operation of the marine facility would occur and on which the dredge slurry pipeline would be placed.
- Pelagic: the estuarine water column of the Calcasieu Ship Channel where construction and operation of the marine facility would occur.
- Estuarine oyster reef: present on shoreline armoring riprap in the intertidal and subtidal zones of the Calcasieu River shoreline within the proposed footprint of the marine facility.

The Project would result in the permanent loss of 21.1 acres of tidal estuarine emergent marsh EFH associated with the construction of the Terminal and the Pipeline's aboveground facilities. The Project would also result in the permanent loss of 2.0 acres of estuarine mud/soft bottom EFH within the Terminal footprint and short- to long-term loss of 0.05 acre of estuarine oyster reef EFH. It would permanently convert 47.0 acres of estuarine mud/soft bottom EFH present in the marine facility dredge footprint, including 2.8 acres of intertidal mudflat deemed by the COE to be a "special aquatic site," from shallow water habitat to deep estuarine mud/soft bottom EFH. We conclude these impacts would be appropriately mitigated for by Commonwealth's compliance with the CWA and MSA permitting processes. The Project is also expected to cause temporary impacts associated with in-water construction (i.e., dredging, turbidity, and pile driving-related underwater noise affecting estuarine and nearshore habitat). Dredging would account for the majority of this impact area. These impacts are expected to be of short duration, as populations of FMP species and their food sources would be expected to recover quickly following

construction and maintenance dredges. Construction impacts would also be minimized through implementation of Commonwealth's *Procedures*, the *SPAR Plan*, use of a hydraulic suction dredge during dredging and bubble curtains and cushion blocks during pile driving, and the revised *HDD Contingency Plan*. Therefore, we conclude that these Project impacts would adversely affect EFH, but would be temporary to short-term in duration and not significant.

5.1.8 Threatened, Endangered, and Other Special Status Species

A total of 20 federally protected species, 1 proposed species, and 1 species that is under federal review have the potential to occur in the vicinity of the Project. Of these species, nine are marine mammals, four are birds, six are turtles, and three are fish. Potential impacts on aquatic and terrestrial habitats and species are described above and those same impacts apply to threatened and endangered species. We conclude the Project would have *no effect* or would be *not likely to adversely affect* 19 federally listed species, would have *no effect* on the species proposed as threatened, would *not contribute to a trend toward federal listing* for the 1 species under federal review. We conclude the Project is *likely to adversely affect* the threatened eastern black rail.

On June 21, 2019, the FWS concurred with our findings that the Project is *not likely to adversely affect* all listed species and critical habitat under the jurisdiction of the FWS that may be found in the vicinity of the Project, *except* the eastern black rail. However, at the time of the FWS notification, the eastern black rail was still only proposed for listing (as of October 9, 2018) and the FWS determined that Project implementation was not likely to jeopardize the continued existence of the species. The FWS provided conservation measures for Commonwealth to consider to minimize impacts on the eastern black rail and noted that additional consultation may be required if the status of the eastern black rail changed from proposed to threatened. On October 19, 2020, the NMFS stated that because all potential project effects to listed species and critical habitat under the jurisdiction of NMFS were found to be extremely unlikely to occur, insignificant, or beneficial, NMFS concluded that the proposed action is *not likely to adversely affect* listed species and critical habitat under NMFS's purview. NMFS continued that their notification concluded consultation responsibilities under the ESA for species under NMFS's purview.

The FWS formally listed the eastern black rail as threatened on October 8, 2020, effective November 9, 2020. On May 4, 2021, as required by section 7 of the ESA, the FERC submitted a BA to the FWS and requested to initiate formal consultation regarding the potential impacts of the Project on the eastern black rail. On September 16, 2021, the FWS published a BO, which stated the FWS concurred with the findings of the BA that the Project would have *no effect*, was *not likely to adversely affect*, or would *not contribute to a trend toward federal listing* for all species potentially affected by the Project, except for the eastern black rail. The FWS concurrence fulfilled the FERC's responsibilities for the Project under section 7 of the ESA for all federally listed species in the BA other than the eastern black rail. In the BO, the FWS reviewed the status of the eastern black rail, the environmental baseline for the Project area and the effects of the Project and determined that the Project is *not likely to jeopardize the continued existence* of the eastern black rail.

Additionally, the FWS issued an incidental take statement, a list of Terms and Conditions that are mandatory for Commonwealth to follow during construction of the Project, accompanying Monitoring and Reporting Requirements necessary to monitor the impacts of the allowed incidental take, and conservation recommendations for the Project. On October 6, 2021, Commonwealth formally accepted the Terms and Conditions of the BO, thereby concluding formal consultation for the Project.¹⁸⁸

188 See accession no. 20211006-5079.

5.1.9 Land Use, Recreation, and Visual Resources

The Project would be within the Louisiana Coastal Zone. All activities or developments that may affect Louisiana's coastal zone require a federal consistency review under the National Coastal Zone Management Program and must obtain a Coastal Use Permit from the LDNR. To ensure compliance with this federal requirement, we recommend in section 4.8.5 that Commonwealth file the consistency determination with FERC prior to any Project construction.

The Terminal would be constructed on open land (106.1 acres), which consists primarily of emergent wetlands, developed land (26.4 acres), open water (2.7 acres), and forested land (0.2 acres). The Pipeline would be constructed on open land (43.5 acres) and open water (4.8 acres). The Terminal site is surrounded by open water and undeveloped open wetlands and the proposed Pipeline right-of-way is surrounded by open wetlands. The Terminal site and proposed Pipeline right-of-way are entirely on private lands, and no federal or state-managed public lands are within 0.25 mile of the site. There are currently no existing or planned residential or commercial developments within 0.25 mile of the Project. There is one residential campsite, owned by the property landowner, within the boundaries of the Terminal site. The camp residence would be removed as part of the lease agreement between Commonwealth and the landowner. There are both existing and planned industrial developments within the vicinity of the Project. Due to the industrial use of lands in the general vicinity and the previously disturbed nature of the surrounding area, impacts on land use from the Project would not be significant.

Several recreational and special interest sites are in proximity to the Project site. While the Calcasieu River would be the only one directly impacted by the Project, some may experience indirect impacts such as change in viewshed and/or increases in traffic in the area of the recreation sites. Cameron Parish is home to vital fishery resources and serves as a conduit for access to such resources in the Calcasieu Ship Channel and the Gulf of Mexico. Construction associated with the Project may temporarily impact local recreational fishing, bird watching, trapping, hunting, and boating activities as a result of increased vessel traffic within the Calcasieu Ship Channel. This increase in vessel traffic related to construction of the Project would be short term. During operations, up to 156 LNG carriers would call at the Terminal per year. While some delays would be expected during these periods, these delays would be minor and temporary and in compliance with the purpose of the waterway. The Calcasieu Ship Channel was originally constructed by the COE for navigation in support of industry. Therefore, we have determined the Project would not have any significant adverse impacts on recreational or commercial boating or fishing along the Calcasieu Ship Channel and Gulf of Mexico.

Overall, the proposed Terminal would be visible to varying degrees to users of the Calcasieu Ship Channel, nearby beaches and towns, and motorists along the Creole Nature Trail All-American Road. Although the addition of the facility would be consistent with the general character of the Calcasieu Ship Channel, the addition of the Terminal at this location would represent a significant impact on the viewshed of boaters, beachgoers, and local residents, including the RV residence adjacent to the site, as it would detract from the overall quality of the scenic views of this portion of the region.

The Pipeline would be constructed through generally flat wetlands but would not alter the landscape of the region, as the pipeline would be buried during operation. Construction of the Pipeline could result in a temporary visual impact within the viewshed of the Creole Nature Trail All-American Road but Commonwealth would restore areas disturbed during construction to their prior condition. Aboveground facilities associated with the Pipeline would include an interconnection and pig launching facility and a meter station. The closest visual receptors of the aboveground facilities would be motorists traveling along the Creole Nature Trail All-American Road, which is about 0.9 mile east of the proposed meter station location. Although the meter station may be visible from the road, given the distance, it is unlikely that it would be noticed by those driving along the road. Therefore, the visual impact of the aboveground facilities would not have a significant impact on the aesthetics of the landscape along the Pipeline route.

5.1.10 Socioeconomics

Construction of the Project would result in temporary positive impacts due to increases in construction jobs, payroll taxes, purchases made by the workforce, and expenses associated with the acquisition of material goods and equipment. Operation of the Project would not have a significant effect on the local governments' tax revenues. Construction of the Project would not have a significant adverse impact on local populations, employment, provision of community services, housing, or property values.

Vehicle traffic is anticipated to temporarily increase during construction of the Terminal due to worker vehicles, construction vehicles, and trucks taking materials and equipment to and from the site. To minimize the increase, Commonwealth would transport a majority of the construction workforce to the Project area using passenger buses from two existing parking lots in Carlyss, Louisiana. Commonwealth's traffic models indicate there would be no disruption to local traffic flow related to the off-site parking and use of passenger buses. Construction of the Pipeline would result in only minor, temporary impacts on traffic in the Project area, and operation would not result in any significant impacts on traffic or roadways. Operating the Terminal would require an estimated 65 employees. Commonwealth estimates that operation would average about 75 light vehicles per day (includes full time staff and visitors) and 10 heavy vehicles per day. No change in the LOS for the area roadways is anticipated. Based on the construction traffic assessment along LA-27, we conclude that the additional traffic generated by operations employees, visitors, and deliveries would not result in a significant increase in traffic volume on area roadways.

A 2018 marine traffic study commissioned by the Port of Lake Charles found that a projected twofold increase of vessel traffic within the Calcasieu Ship Channel would not affect the capability of the channel to effectively provide deep-water access for maritime commerce. During construction, Commonwealth proposes to deliver major material supplies and equipment to the Project via barge transport. Commonwealth estimates that an average of seven barges per week would be expected during peak construction. During operations, up to 13 LNG vessels per month (156 per year) would call on the Terminal. The USCG issued the Letter of Recommendation for the Project, which stated that the Calcasieu Ship Channel is considered suitable for LNG marine traffic in accordance with its guidance. During operations, security zones for LNG carriers in transit and use of exclusion zones could impact recreational and commercial fishing vessels within the Calcasieu Ship Channel because they would be required to stay out of the security zone while the LNG carrier passes. After the moving security zone passes, recreational boaters and fishing vessels could return and continue their prior activities. Given the Terminal's proximity to the mouth of the Calcasieu River (about 0.5 mile), we conclude the increase in construction vessel traffic and the delays associated with LNG carrier security zones are not expected to significantly impact recreational or commercial fishing.

5.1.10.1 Environmental Justice

As described throughout this EIS, the proposed Project would have a range of impacts on the environment and on individuals living in the vicinity of the Project facilities, including environmental justice populations. The closest environmental justice block groups are Census Tract 9702.01, Block Group 3 approximately 0.1 mile from the LNG Terminal (with the closest residence [pilot's temporary housing] approximately 3,300 feet away) and Census Tract 9701, Block Group 1 approximately 2.7 miles from the Pipeline. The closest town within an environmental justice community is Cameron (within Census Tract 9702.01, Block Group 3) over 2 miles away. Based on the scope of the Project and our analysis of the Project's impacts on the environment, we have determined Project-related impacts on wetlands, surface water, aquatic resources, visual resources, recreation, socioeconomic, traffic, noise, and air quality may adversely and disproportionately affect the identified environmental justice communities. In general, the magnitude and intensity of the impacts would be greater for individuals and residences closest to the Project's facilities and would diminish with distance. Visual impacts on environmental justice communities

near the Terminal would be significant. As outlined in section 4.9.12.4, Commonwealth has committed to implementing a Facility Lighting Plan, which would reduce visual impacts on the environmental justice communities. Environmental justice communities in the area could also experience cumulative impacts due to the addition of other projects within the geographic scope (see section 4.13). Due to the presence of significant visual impacts on an environmental justice community and overall cumulative impacts in the project area, we conclude that impacts on environmental justice communities would be disproportionately high and adverse. Cultural Resources

Section 106 of the NHPA, as amended, requires that the FERC consider the effects of its undertakings on historic properties, and to afford the Advisory Council on Historic Preservation an opportunity to comment on proposed projects. Cultural resources surveys for the Terminal were conducted in two field studies conducted in 2018 and 2019, respectively. The resulting reports were provided to the FERC and the Louisiana SHPO. The entire Terminal, except for areas that were inaccessible, was visually inspected for cultural materials. Special attention was given to potential high-probability areas adjacent to roadways and along sand dunes. A total of 51 shovel tests were excavated during the 2018 survey and 77 shovel tests were excavated during the 2019 survey. All of the tests were negative for cultural materials. After the 2018 and 2019 surveys, the SHPO provided letters stating that no properties listed in or eligible for listing in the NRHP would be affected by the Project. We concur with the SHPO.

Commonwealth contacted the SHPO regarding the Pipeline, the marine facility, and the proposed Park and Ride lots. Commonwealth did not conduct field surveys for these locations. Instead, Commonwealth provided the SHPO a description of the Project component under inquiry, an assessment of cultural resource probability, and maps of the area and requested the SHPO's concurrence that no survey was necessary. In each instance, the SHPO indicated that no known historic properties would be affected by the project components. We concur with the SHPO.

We sent the 2018 and 2021 Project NOI to nine federally recognized Native American tribes. The Choctaw Nation of Oklahoma responded with a request for formal consultation with the FERC for the Project, GIS shapefiles of the Project area, and the cultural resources survey report. Commonwealth sent a copy of the cultural resources survey report, SHPO letter, and GIS shapefiles to the Choctaw Nation of Oklahoma. No further comments were received from the Choctaw Nation of Oklahoma. No other tribes responded to the NOIs.

In 2018 we wrote letters to the nine tribes describing the Project and requesting comments. One tribe responded to the letter. The Choctaw Nation of Oklahoma responded that the tribe had requested formal consultation with the FERC for the Project and requested GIS shapefiles of the Project area and cultural resources surveys. As noted above, Commonwealth provided the Choctaw Nation with the requested information. Commonwealth spoke over the telephone with the Coushatta Tribe of Louisiana in April 2018. The tribe requested to be kept informed of the Project. Commonwealth sent a copy of the cultural resources survey report and SHPO letter to the Coushatta Tribe of Louisiana on August 2, 2019. Commonwealth also sent follow-up emails to the Alabama-Coushatta Tribe of Texas, Alabama-Quassarte Tribal Town, Chitimacha Tribe of Louisiana, Choctaw Nation of Oklahoma, Coushatta Tribe of Louisiana, Jena Band of Choctaw Indians, Mississippi Band of Choctaw Indians, and Tunica-Biloxi Tribe of Louisiana on April 2, 2019. No further comments have been received.

Commonwealth submitted a plan addressing the unanticipated discovery of cultural resources and human remains during construction. The SHPO provided comments to Commonwealth on the plan in a letter dated April 3, 2019. We also requested revisions to the plan. Commonwealth provided a revised plan addressing the SHPO's and our comments. We have reviewed the revised plan and found it acceptable.

Cultural resources surveys are complete for the Project and the SHPO and FERC concur that no historic properties would be affected. Therefore, compliance with Section 106 of the NHPA is complete.

5.1.11 Air Quality and Noise

5.1.11.1 Air Quality

Air quality would be affected by construction and operation of the Project; however, most air emissions associated with the Project would result from the long-term operation of the Terminal. Emissions during Terminal and Pipeline construction would generally be associated with onshore construction activities conducted using on-road and off-road mobile equipment and offshore construction activities conducted using marine vessels such as tugboats or barges and a dredging vessel. Vehicular and/or marine vessel emissions from gasoline and diesel engines would comply with applicable EPA mobile source emission regulations (40 CFR 85) by using equipment manufactured to meet these specifications. The combustion and fugitive dust emissions that would occur during construction would be largely limited to the immediate vicinity of the Terminal site and to a lesser extent in the areas where the Pipeline would be constructed. These emissions would represent a small portion of Cameron Parish's yearly emissions inventories and would subside once construction has been completed. Therefore, we conclude the construction-related impact on local air quality during construction of the Terminal and Pipeline would not be significant.

Impacts on air quality during operation of the Project would primarily result from emissions related to the liquefaction trains and associated generators and flare systems of the Terminal; mobile emissions sources such as cars and trucks associated with the Terminal facility; LNG carriers and associated escort tugs arriving to, berthing at, and departing from the marine facility; and emissions related to the aboveground facilities of the Pipeline. Combustion sources primarily include engines, turbines, heaters/furnaces, and flares. Non-combustion sources primarily include storage tanks, LNG loading and transfer operations, and fugitive emissions from pipeline and equipment leaks. Non-combustion emissions would occur from the Terminal facilities, Pipeline, and meter stations, as well as from one annually scheduled pipeline pigging event. Commonwealth conducted an air quality dispersion modeling analysis, which indicates that the ambient pollutant concentrations that would result from these emissions would not lead to violation of any ambient air quality standard or exceedance of any other air quality impact criterion.

Commonwealth modeled pollutant sources combined with additional (background) pollutant sources (e.g., other industry facilities) within the pollutant-specific area of impact to determine source contribution in comparison with the NAAQS. The area of impact was established as the distance from the Project to the farthest receptor that showed a modeled impact greater than the SIL in the significance modeling analysis. Commonwealth conducted a source contribution analysis to determine whether the Project would contribute significantly to the modeled NAAQS exceedance, while FERC evaluated the additional impact of LNG carriers and tugs. The proportions of the exceedance concentrations attributable to the Project are very small. In the instance of the highest overall modeled maximum impact for stationary sources plus background sources concentration ($229 \mu\text{g}/\text{m}^3$), the Project-only concentration contribution ($0.0004 \mu\text{g}/\text{m}^3$) is well below the SIL concentration for 1-hour NO₂ ($7.5 \mu\text{g}/\text{m}^3$). Similarly, in the instance of the highest overall modeled maximum impact for LNG stationary sources and LNG carriers and tugs, plus background sources concentration ($308 \mu\text{g}/\text{m}^3$), the Project-only (inclusive of LNG carriers and tugs) concentration contribution ($0.005 \mu\text{g}/\text{m}^3$) is well below the SIL concentration for 1-hour NO₂ ($7.5 \mu\text{g}/\text{m}^3$). In fact, the exceedances would still be predicted in the absence of the Project (i.e., the existing background emissions sources from LDEQ's Emissions and Inventory Reporting Center are driving the NAAQS exceedances). This modeling analysis demonstrates that the proposed Project would have a minor contribution to the modeled maximum impact, however, based on this small level of impact, we do not believe the Project would cause or contribute to the potential NAAQS exceedance. Therefore, we conclude the impact on local air quality during operation of the Terminal and Pipeline would not be significant.

Commonwealth would use a site-specific program to identify leaking equipment and minimize fugitive emissions and Commonwealth Pipeline operations would comply with all applicable PHMSA codes and advisories regarding leak detection and repair and LDEQ air quality regulations.

5.11.2 Noise

Noise would affect the local environment during both construction and operation of the Project facilities. In response to our recommendation in the draft EIS, Commonwealth provided a revised ambient noise survey representing current ambient conditions in the vicinity of the Terminal site. Pile driving, dredging, and internal combustion engines associated with Terminal construction would generate noise, but general construction activities associated with the Terminal would be localized to the Terminal site. Commonwealth would conduct land-based and in-water pile-driving activities during construction of the Terminal and marine facilities and use heavy machinery (e.g., earth moving equipment) powered by internal combustion engines throughout construction. Commonwealth has stated it would conduct pile driving and general construction activities between the hours of 7:00 a.m. and 10:00 p.m. We recommend in section 4.11.2.4 that Commonwealth monitor construction noise levels between the 7:00 p.m. and 7:00 a.m. and restrict the noise attributable to construction activities to no more than 55 dBA Ldn (48.6 dBA L_{eq}) at NSAs 1 and 2. Excavation and dredging would be required to create a berthing area for LNG carriers. Primary noise sources from dredging activities would include diesel engines with associated pumps, as well as a tugboat used to position the dredge for in-water activities. Construction dredging activities would be conducted on a 24-hour basis over the course of about 5 months. Maintenance dredging would require about 7 days to complete on a biennial basis. In response to our recommendation in the draft EIS, Commonwealth filed a *Nighttime Noise Monitoring Plan* that details the measures it would implement to reduce projected nighttime dredging noise levels to at or below the 55 dBA L_{dn} threshold.

During construction of the Pipeline, noise would be generated primarily by construction equipment, including HDD equipment used to install the Pipeline. General construction activities associated with the Pipeline would result in relatively temporary increases in ambient noise levels at a given location, the extent of which would vary based on the different types of construction equipment used and would only occur during daylight hours. HDD-related activities could occur during nighttime hours. Modeled noise values indicate HDD-only operations combined with ambient conditions would result in a minor increase over ambient conditions but noise levels at nearby NSAs would remain at or below the 55 dBA threshold. Normal operations of the proposed Pipeline would not result in noise impacts on NSAs.

Operation of the Terminal site would produce noise on a continuous basis. Many of the components of the Terminal facilities would be constructed with integrated noise mitigation technologies or approaches. Commonwealth conducted modeling exercises using performance data for the proposed Terminal equipment to determine whether the Terminal could operate in accordance with FERC criteria. Modeled values indicate the sound level of Terminal operations would remain below the FERC's 55 dBA threshold at nearby NSAs. However, the modeled 55 dBA contour was very close to one NSA. Therefore, in section 4.11.2, we recommend Commonwealth file full power load noise surveys within 60 days of beginning operations to confirm that Terminal noise levels do not exceed the 55 dBA threshold or modify operation of the Terminal to achieve noise levels less than the prescribed threshold.

We conclude that with implementation of the recommended noise mitigation plans for dredging and operation of the Terminal, construction and operation of the Project would not result in significant noise impacts on NSAs.

5.1.12 Reliability and Safety

As part of the NEPA review and NGA determinations, Commission staff assesses the potential impact on the human environment in terms of safety and whether the proposed facilities would operate safely, reliably, and securely.

As a cooperating agency, the DOT assists the FERC by determining whether Commonwealth LNG Project's proposed design would meet the DOT's 49 CFR 193 Subpart B siting requirements. The PHMSA provided an LOD on the Project's compliance with 49 CFR 193 Subpart B on August 2, 2022. This determination will be provided to the Commission as further consideration to the Commission on its decision to authorize or deny the Project. If the Project is authorized, constructed, and operated, the facility would be subject to the DOT's inspection and enforcement program and final determination of whether a facility is in compliance with the requirements of 49 CFR 193 would be made by the DOT staff.

As a cooperating agency, the USCG also assisted the FERC staff by reviewing the proposed LNG terminal and the associated LNG marine vessel traffic. The USCG reviewed a WSA submitted by Commonwealth that focused on the navigation safety and maritime security aspects of LNG marine vessel transits along the affected waterway. On March 7, 2019, the USCG issued an LOR that recommended the Calcasieu River Ship Channel be considered suitable for accommodating the type and frequency of LNG marine traffic associated with this Project based on the WSA and in accordance with the guidance in the USCG's NVIC 01-11. If the Project is authorized, constructed, and operated, the facilities would be subject to the USCG's inspection and enforcement program to ensure compliance with the requirements of 33 CFR 105 and 33 CFR 127.

FERC staff conducted a preliminary engineering and technical review of the Commonwealth LNG Project design, including potential external impacts based on the site location. Based on this review, we recommend a number of mitigation measures, which would ensure continuous oversight prior to initial site preparation, prior to construction of final design, prior to commissioning, prior to introduction of hazardous fluids, prior to commencement of service, and throughout life of the facility to enhance the reliability and safety of the facility to mitigate the risk of impact on the public. With the incorporation of these mitigation measures and oversight, FERC staff concluded that the Commonwealth LNG Project design would include acceptable layers of protection or safeguards that would reduce the risk of a potentially hazardous scenario from developing into an event that could impact the offsite public.

The Pipeline System and associated aboveground facilities would be constructed, operated, and maintained in compliance with DOT standards published in 49 CFR 192. These regulations are intended to minimize the potential for natural gas facility accidents and protect the public and environment. The DOT specifies material selection and qualifications; minimum design requirements; and protection from internal, external, and atmospheric corrosion. Because the Pipeline would be constructed according to the DOT regulations, we conclude that the Pipeline System would not have a significant impact on public safety.

5.1.13 Cumulative Impacts

Our analysis of cumulative impacts includes other projects in the vicinity of the proposed Commonwealth Project that could affect the same resources as the Project in the same approximate timeframe. We generally conclude that the potential impacts of the Project, when combined with the impacts from the other projects considered in the geographic scopes, would not result in a significant impact on resources. Commonwealth's proposed mitigation measures would minimize or offset Project impacts on local resources. Additionally, concurrent construction and operation of the Project and the other projects in the area would have a beneficial cumulative effect on revenues for the state and the local parishes

resulting from increased expenditures from the workforce and their families and increased property taxes from the projects.

The exceptions to this conclusion are the Project's impacts on visual resources and environmental justice populations. Construction of the Project and other planned area LNG projects and port facilities would contribute to cumulative visual impacts on users of the Calcasieu Ship Channel, users of Holly and Broussard Beaches, residents in the town of Cameron, and motorists along the Creole Nature Trail All-American Road. The Creole Nature Trail is a 180-mile road that runs from Sulphur to Holly Beach and from Lake Charles down to Cameron. Construction of Commonwealth, Calcasieu Pass, and CP2 would result in several industrial sites in a concentrated area and the additional sites, including flares, lighting, and storage tanks, may be visible for several miles. Visual changes in this area would be significant compared to the conditions prior to construction of LNG projects along this portion of the Calcasieu Ship Channel.

Regarding environmental justice communities, we have determined environmental justice communities in the study area would experience cumulative impacts on wetlands, surface water, aquatic resources, socioeconomics, traffic, noise, air quality, GHG and significant visual cumulative impacts related to the project and the additional projects within the respective geographic scopes of the Project. Cumulative impacts on environmental justice communities related to wetlands, surface water, aquatic resources, socioeconomics, traffic, noise, and air quality would be less than significant. However, cumulative impacts related to visual resources would be significant.

Finally, Commonwealth's filings indicate the Project would increase the atmospheric concentration of GHGs, in combination with past and future emissions from all other sources and would contribute to climate change. This EIS is not characterizing the Project's GHG emissions as significant or insignificant because the Commission is conducting a generic proceeding to determine whether and how the Commission will conduct significance determinations going forward.

5.1.14 Alternatives

We evaluated several alternatives to the proposed Project, including the No-Action Alternative; system alternatives for the Terminal; alternative Terminal sites and alternative Pipeline routes. While the No-Action Alternative would eliminate the short- and long-term environmental impacts identified in the EIS, the stated objectives of the proposed action would not be met.

System alternatives evaluated for the Terminal included 7 existing LNG import terminals with approved, proposed, or planned expansions to provide liquefaction capabilities and 11 approved, proposed, or planned stand-alone LNG projects. We cannot speculate or conclude that excess capacity would be available to accommodate Commonwealth's purpose and need. Consequently, we must conclude that the proposed export capacity at any other existing or proposed LNG facility would require an expansion or new facilities similar to the facilities proposed for the Terminal, resulting in environmental impacts similar to the Project. These systems alternatives, therefore, offer no significant environmental advantage over the proposed Project and are not considered to be preferable.

The alternative sites we evaluated in addition to the Project site included six locations in southwest Louisiana along the Calcasieu Ship Channel, one location along the Sabine Pass Ship Channel, and one location in Plaquemines Parish along the Mississippi River. In general, these sites did not provide clear evidence of a significant environmental advantage to Commonwealth's proposed site.

We also evaluated alternative liquefaction designs for the Terminal as well as alternative power sources (i.e., offsite, grid-based electricity versus on-site natural gas-powered generators). Commonwealth's proposed liquefaction design was determined to be the smallest facility footprint that would still allow Commonwealth to achieve its stated Project purpose. Pursuing a grid-based electricity

APPENDIX H

Predicted Cumulative Concentrations for NAAQS Exceedances Within 50km of the Commonwealth LNG Project

| Predicted Cumulative Concentrations for NAAQS Exceedances at the Commonwealth LNG Project for LNG Stationary Sources | | | | | | |
|--|---------------------------------|---|---|--|--|---|
| Pollutant Averaging Period | Location of NAAQS Exceedance a/ | Modeled + Background Concentration ($\mu\text{g}/\text{m}^3$) | NAAQS Standard ($\mu\text{g}/\text{m}^3$) | Project Only Maximum Contribution to NAAQS Exceedance ($\mu\text{g}/\text{m}^3$) | Project Contribution to the Cumulative Concentration (Percent) | Distance from the Project NAAQS Exceedance (km) |
| (x) | (y) | | | | | |
| NO ₂ 1-hour | 450900.00 | 3322200.00 | 193.9 | 188.0 | 0.0344 | 0.0177% |
| NO ₂ 1-hour | 466900.00 | 3319200.00 | 193.8 | 188.0 | 0.0726 | 0.0375% |
| NO ₂ 1-hour | 464900.00 | 3323200.00 | 193.7 | 188.0 | 0.0151 | 0.0078% |
| NO ₂ 1-hour | 468600.00 | 3295400.00 | 193.1 | 188.0 | 0.0011 | 0.0005% |
| NO ₂ 1-hour | 453900.00 | 3321200.00 | 193.0 | 188.0 | 0.0503 | 0.0261% |
| NO ₂ 1-hour | 449900.00 | 3325200.00 | 192.9 | 188.0 | 0.0239 | 0.0124% |
| NO ₂ 1-hour | 448900.00 | 3326200.00 | 192.7 | 188.0 | 0.0403 | 0.0209% |
| NO ₂ 1-hour | 467900.00 | 3324200.00 | 192.7 | 188.0 | 0.0327 | 0.0170% |
| NO ₂ 1-hour | 449900.00 | 3323200.00 | 192.2 | 188.0 | 0.0533 | 0.0277% |
| NO ₂ 1-hour | 448900.00 | 3327200.00 | 192.2 | 188.0 | 0.0324 | 0.0169% |
| NO ₂ 1-hour | 467900.00 | 3323200.00 | 191.8 | 188.0 | 0.0273 | 0.0142% |
| NO ₂ 1-hour | 467900.00 | 3321200.00 | 191.8 | 188.0 | 0.0700 | 0.0365% |
| NO ₂ 1-hour | 453900.00 | 3320200.00 | 191.6 | 188.0 | 0.0109 | 0.0057% |
| NO ₂ 1-hour | 466900.00 | 3318200.00 | 191.4 | 188.0 | 0.0166 | 0.0087% |
| NO ₂ 1-hour | 467900.00 | 3322200.00 | 191.3 | 188.0 | 0.0595 | 0.0311% |
| NO ₂ 1-hour | 449900.00 | 3324200.00 | 191.1 | 188.0 | 0.0722 | 0.0378% |
| NO ₂ 1-hour | 467900.00 | 3320200.00 | 190.8 | 188.0 | 0.0674 | 0.0353% |
| NO ₂ 1-hour | 463900.00 | 3320200.00 | 190.7 | 188.0 | 0.0215 | 0.0113% |
| NO ₂ 1-hour | 452900.00 | 3322200.00 | 190.5 | 188.0 | 0.0241 | 0.0126% |
| NO ₂ 1-hour | 464900.00 | 3322200.00 | 190.3 | 188.0 | 0.0147 | 0.0077% |
| NO ₂ 1-hour | 466900.00 | 3317200.00 | 190.3 | 188.0 | 0.0172 | 0.0090% |

Table H-2.

Predicted Cumulative Concentrations for NAAQS Exceedances at the Commonwealth LNG Project for LNG Stationary and Mobile Sources

| Pollutant Averaging Period | Location of NAAQS Exceedance a/ | | Modeled + Background Concentration ($\mu\text{g}/\text{m}^3$) | NAAQS Standard ($\mu\text{g}/\text{m}^3$) | Project Only Maximum Contribution to NAAQS Exceedance ($\mu\text{g}/\text{m}^3$) | Project Contribution of the Cumulative Concentration (percent) |
|----------------------------|---------------------------------|-------------|---|---|--|--|
| | (x) | (y) | | | | |
| NO ₂ 1-hour | 468600.00 | 3295200.00 | 307.7 | 188.0 | 0.0055 | 0.0018% |
| NO ₂ 1-hour | 431900.00 | 3328200.00 | 283.0 | 188.0 | 0.0049 | 0.0017% |
| NO ₂ 1-hour | 468700.00 | 3295400.00 | 272.8 | 188.0 | 0.0107 | 0.0039% |
| NO ₂ 1-hour | 465900.00 | 3333200.00 | 271.8 | 188.0 | 0.0573 | 0.0211% |
| NO ₂ 1-hour | 431900.00 | 3324200.00 | 271.0 | 188.0 | 0.0024 | 0.0009% |
| NO ₂ 1-hour | 464900.00 | 3334200.00 | 270.0 | 188.0 | 0.0491 | 0.0182% |
| NO ₂ 1-hour | 464900.00 | 3332200.00 | 266.8 | 188.0 | 0.0416 | 0.0156% |
| NO ₂ 1-hour | 464900.00 | 3333200.00 | 265.7 | 188.0 | 0.0402 | 0.0151% |
| NO ₂ 1-hour | 468600.00 | 3295300.00 | 263.3 | 188.0 | 0.0086 | 0.0032% |
| NO ₂ 1-hour | 432900.00 | 3326200.00 | 262.1 | 188.0 | 0.0115 | 0.0044% |
| NO ₂ 1-hour | 432900.00 | 3327200.00 | 261.5 | 188.0 | 0.0105 | 0.0040% |
| NO ₂ 1-hour | 432900.00 | 3325200.00 | 261.0 | 188.0 | 0.0027 | 0.0010% |
| NO ₂ 1-hour | 468700.00 | 3295200.00 | 260.9 | 188.0 | 0.0077 | 0.0030% |
| NO ₂ 1-hour | 432900.00 | 3324200.00 | 258.6 | 188.0 | 0.0038 | 0.0015% |
| NO ₂ 1-hour | 467900.00 | 3334200.00 | 254.9 | 188.0 | 0.0520 | 0.0204% |
| NO ₂ 1-hour | 468900.00 | 3333200.00 | 253.4 | 188.0 | 0.0422 | 0.0167% |
| NO ₂ 1-hour | 463900.00 | 3332200.00 | 252.7 | 188.0 | 0.0347 | 0.0137% |
| NO ₂ 1-hour | 465900.00 | 3332200.00 | 251.4 | 188.0 | 0.0530 | 0.0211% |
| NO ₂ 1-hour | 463900.00 | 3331200.00 | 251.1 | 188.0 | 0.0306 | 0.0122% |
| NO ₂ 1-hour | 416900.00 | 32889200.00 | 250.9 | 188.0 | 0.0026 | 0.0010% |
| NO ₂ 1-hour | 431900.00 | 3323200.00 | 249.4 | 188.0 | 0.0026 | 0.0010% |
| NO ₂ 1-hour | 464900.00 | 3331200.00 | 247.9 | 188.0 | 0.0444 | 0.0179% |
| NO ₂ 1-hour | 463900.00 | 3330200.00 | 243.5 | 188.0 | 0.0475 | 0.0195% |
| NO ₂ 1-hour | 433900.00 | 3324200.00 | 242.0 | 188.0 | 0.0018 | 0.0008% |
| NO ₂ 1-hour | 468900.00 | 3334200.00 | 241.4 | 188.0 | 0.0341 | 0.0141% |
| NO ₂ 1-hour | 433900.00 | 3326200.00 | 240.3 | 188.0 | 0.0040 | 0.0017% |
| NO ₂ 1-hour | 466900.00 | 3332200.00 | 238.6 | 188.0 | 0.0436 | 0.0183% |
| NO ₂ 1-hour | 432900.00 | 3323200.00 | 237.1 | 188.0 | 0.0271 | 0.0114% |

Predicted Cumulative Concentrations for NAAQS Exceedances at the Commonwealth LNG Project for LNG Stationary and Mobile Sources

| Pollutant Averaging Period | Location of NAAQS Exceedance a/ | | Modeled + Background Concentration ($\mu\text{g}/\text{m}^3$) | NAAQS Standard ($\mu\text{g}/\text{m}^3$) | Project Only Maximum Contribution to NAAQS Exceedance ($\mu\text{g}/\text{m}^3$) | Project Contribution of the Cumulative Concentration (percent) |
|----------------------------|---------------------------------|------------|---|---|--|--|
| | (x) | (y) | | | | |
| NO ₂ 1-hour | 433900.00 | 3325200.00 | 235.4 | 188.0 | 0.0030 | 0.0013% |
| NO ₂ 1-hour | 458900.00 | 3330200.00 | 235.0 | 188.0 | 0.0717 | 0.0305% |
| NO ₂ 1-hour | 456900.00 | 3332200.00 | 234.6 | 188.0 | 0.0510 | 0.0217% |
| NO ₂ 1-hour | 467900.00 | 3333200.00 | 232.0 | 188.0 | 0.0495 | 0.0213% |
| NO ₂ 1-hour | 457900.00 | 3330200.00 | 231.4 | 188.0 | 0.0293 | 0.0126% |
| NO ₂ 1-hour | 466900.00 | 3331200.00 | 231.2 | 188.0 | 0.0392 | 0.0169% |
| NO ₂ 1-hour | 457900.00 | 3331200.00 | 230.4 | 188.0 | 0.0415 | 0.0180% |
| NO ₂ 1-hour | 468900.00 | 3336200.00 | 229.8 | 188.0 | 0.0436 | 0.0190% |
| NO ₂ 1-hour | 456900.00 | 3331200.00 | 229.8 | 188.0 | 0.0625 | 0.0272% |
| NO ₂ 1-hour | 468900.00 | 3335200.00 | 229.6 | 188.0 | 0.0453 | 0.0197% |
| NO ₂ 1-hour | 464900.00 | 3330200.00 | 229.6 | 188.0 | 0.0686 | 0.0299% |
| NO ₂ 1-hour | 455900.00 | 3331200.00 | 229.5 | 188.0 | 0.0520 | 0.0227% |
| NO ₂ 1-hour | 433900.00 | 3327200.00 | 228.9 | 188.0 | 0.0040 | 0.0017% |
| NO ₂ 1-hour | 452900.00 | 3296200.00 | 228.8 | 188.0 | 0.0032 | 0.0014% |
| NO ₂ 1-hour | 457900.00 | 3329200.00 | 228.8 | 188.0 | 0.0827 | 0.0361% |
| NO ₂ 1-hour | 458900.00 | 3329200.00 | 227.9 | 188.0 | 0.0652 | 0.0286% |
| NO ₂ 1-hour | 456900.00 | 3329200.00 | 225.2 | 188.0 | 0.0339 | 0.0151% |
| NO ₂ 1-hour | 459900.00 | 3328200.00 | 224.6 | 188.0 | 0.0503 | 0.0224% |
| NO ₂ 1-hour | 463900.00 | 3329200.00 | 223.9 | 188.0 | 0.0409 | 0.0183% |
| NO ₂ 1-hour | 456900.00 | 3330200.00 | 223.4 | 188.0 | 0.0645 | 0.0289% |
| NO ₂ 1-hour | 467900.00 | 3331200.00 | 223.2 | 188.0 | 0.0598 | 0.0268% |
| NO ₂ 1-hour | 432900.00 | 3322200.00 | 222.2 | 188.0 | 0.0030 | 0.0013% |
| NO ₂ 1-hour | 456900.00 | 3328200.00 | 221.4 | 188.0 | 0.0423 | 0.0191% |
| NO ₂ 1-hour | 465900.00 | 3331200.00 | 221.1 | 188.0 | 0.0361 | 0.0163% |
| NO ₂ 1-hour | 434900.00 | 3325200.00 | 220.6 | 188.0 | 0.0023 | 0.0010% |
| NO ₂ 1-hour | 455900.00 | 3330200.00 | 220.4 | 188.0 | 0.0563 | 0.0256% |
| NO ₂ 1-hour | 466900.00 | 3330200.00 | 220.3 | 188.0 | 0.0287 | 0.0130% |
| NO ₂ 1-hour | 468900.00 | 3332200.00 | 220.2 | 188.0 | 0.0473 | 0.0215% |
| NO ₂ 1-hour | 458900.00 | 3328200.00 | 220.2 | 188.0 | 0.0418 | 0.0190% |

Predicted Cumulative Concentrations for NAAQS Exceedances at the Commonwealth LNG Project for LNG Stationary and Mobile Sources

| Pollutant Averaging Period | Location of NAAQS Exceedance a/ | | Modeled + Background Concentration ($\mu\text{g}/\text{m}^3$) | NAAQS Standard ($\mu\text{g}/\text{m}^3$) | Project Only Maximum Contribution to NAAQS Exceedance ($\mu\text{g}/\text{m}^3$) | Project Contribution of the Cumulative Concentration (percent) |
|----------------------------|---------------------------------|------------|---|---|--|--|
| | (x) | (y) | | | | |
| NO ₂ 1-hour | 469900.00 | 3333200.00 | 219.7 | 188.0 | 0.0209 | 0.0095% |
| NO ₂ 1-hour | 457900.00 | 3328200.00 | 219.7 | 188.0 | 0.0670 | 0.0305% |
| NO ₂ 1-hour | 433900.00 | 3323200.00 | 219.3 | 188.0 | 0.0027 | 0.0012% |
| NO ₂ 1-hour | 455900.00 | 3333200.00 | 218.7 | 188.0 | 0.0655 | 0.0299% |
| NO ₂ 1-hour | 434900.00 | 3324200.00 | 218.6 | 188.0 | 0.0026 | 0.0012% |
| NO ₂ 1-hour | 458900.00 | 3327200.00 | 218.2 | 188.0 | 0.0347 | 0.0159% |
| NO ₂ 1-hour | 455900.00 | 3332200.00 | 217.6 | 188.0 | 0.0420 | 0.0193% |
| NO ₂ 1-hour | 455900.00 | 3328200.00 | 217.5 | 188.0 | 0.0689 | 0.0317% |
| NO ₂ 1-hour | 434900.00 | 3326200.00 | 217.1 | 188.0 | 0.0026 | 0.0012% |
| NO ₂ 1-hour | 455900.00 | 3329200.00 | 217.0 | 188.0 | 0.0655 | 0.0302% |
| NO ₂ 1-hour | 471900.00 | 3327200.00 | 216.6 | 188.0 | 0.0012 | 0.0006% |
| NO ₂ 1-hour | 467900.00 | 3332200.00 | 216.5 | 188.0 | 0.0465 | 0.0215% |
| NO ₂ 1-hour | 459900.00 | 3327200.00 | 216.4 | 188.0 | 0.0335 | 0.0155% |
| NO ₂ 1-hour | 455900.00 | 3327200.00 | 215.5 | 188.0 | 0.0877 | 0.0407% |
| NO ₂ 1-hour | 458900.00 | 3318200.00 | 214.9 | 188.0 | 0.0057 | 0.0026% |
| NO ₂ 1-hour | 454900.00 | 3329200.00 | 214.7 | 188.0 | 0.0666 | 0.0310% |
| NO ₂ 1-hour | 463900.00 | 3328200.00 | 214.7 | 188.0 | 0.0591 | 0.0275% |
| NO ₂ 1-hour | 431900.00 | 3320200.00 | 214.3 | 188.0 | 0.0024 | 0.0011% |
| NO ₂ 1-hour | 457900.00 | 3326200.00 | 213.8 | 188.0 | 0.0352 | 0.0164% |
| NO ₂ 1-hour | 460900.00 | 3326200.00 | 213.8 | 188.0 | 0.0310 | 0.0145% |
| NO ₂ 1-hour | 465900.00 | 3329200.00 | 213.5 | 188.0 | 0.0310 | 0.0145% |
| NO ₂ 1-hour | 456900.00 | 3327200.00 | 213.2 | 188.0 | 0.0377 | 0.0177% |
| NO ₂ 1-hour | 453900.00 | 3329200.00 | 213.1 | 188.0 | 0.0556 | 0.0261% |
| NO ₂ 1-hour | 469900.00 | 3332200.00 | 212.5 | 188.0 | 0.0475 | 0.0224% |
| NO ₂ 1-hour | 434900.00 | 3327200.00 | 212.5 | 188.0 | 0.0191 | 0.0090% |
| NO ₂ 1-hour | 464900.00 | 3329200.00 | 212.3 | 188.0 | 0.0350 | 0.0165% |
| NO ₂ 1-hour | 433900.00 | 3322200.00 | 212.1 | 188.0 | 0.0150 | 0.0071% |
| NO ₂ 1-hour | 454900.00 | 3328200.00 | 211.8 | 188.0 | 0.0641 | 0.0302% |
| NO ₂ 1-hour | 465900.00 | 3330200.00 | 211.8 | 188.0 | 0.0332 | 0.0157% |

Predicted Cumulative Concentrations for NAAQS Exceedances at the Commonwealth LNG Project for LNG Stationary and Mobile Sources

| Pollutant Averaging Period | Location of NAAQS Exceedance a/ | | Modeled + Background Concentration ($\mu\text{g}/\text{m}^3$) | NAAQS Standard ($\mu\text{g}/\text{m}^3$) | Project Only Maximum Contribution to NAAQS Exceedance ($\mu\text{g}/\text{m}^3$) | Project Contribution of the Cumulative Concentration (percent) |
|----------------------------|---------------------------------|------------|---|---|--|--|
| | (x) | (y) | | | | |
| NO ₂ 1-hour | 454900.00 | 3327200.00 | 210.7 | 188.0 | 0.0311 | 0.0147% |
| NO ₂ 1-hour | 468900.00 | 3331200.00 | 210.6 | 188.0 | 0.0520 | 0.0247% |
| NO ₂ 1-hour | 457900.00 | 3327200.00 | 210.5 | 188.0 | 0.0442 | 0.0210% |
| NO ₂ 1-hour | 466900.00 | 3329200.00 | 210.3 | 188.0 | 0.0288 | 0.0137% |
| NO ₂ 1-hour | 465900.00 | 3328200.00 | 210.2 | 188.0 | 0.0344 | 0.0164% |
| NO ₂ 1-hour | 458900.00 | 3326200.00 | 209.9 | 188.0 | 0.0551 | 0.0262% |
| NO ₂ 1-hour | 435900.00 | 3326200.00 | 209.7 | 188.0 | 0.0025 | 0.0012% |
| NO ₂ 1-hour | 452900.00 | 3329200.00 | 209.5 | 188.0 | 0.0470 | 0.0224% |
| NO ₂ 1-hour | 459900.00 | 3325200.00 | 209.1 | 188.0 | 0.0247 | 0.0118% |
| NO ₂ 1-hour | 459900.00 | 3326200.00 | 208.9 | 188.0 | 0.0337 | 0.0161% |
| NO ₂ 1-hour | 460900.00 | 3325200.00 | 208.8 | 188.0 | 0.0461 | 0.0221% |
| NO ₂ 1-hour | 465900.00 | 3327200.00 | 208.8 | 188.0 | 0.0377 | 0.0180% |
| NO ₂ 1-hour | 453900.00 | 3328200.00 | 208.6 | 188.0 | 0.0415 | 0.0199% |
| NO ₂ 1-hour | 467900.00 | 3330200.00 | 208.6 | 188.0 | 0.0371 | 0.0178% |
| NO ₂ 1-hour | 454900.00 | 3326200.00 | 208.4 | 188.0 | 0.0429 | 0.0206% |
| NO ₂ 1-hour | 429900.00 | 3318200.00 | 208.1 | 188.0 | 0.0010 | 0.0005% |
| NO ₂ 1-hour | 427900.00 | 3296200.00 | 208.0 | 188.0 | 0.0160 | 0.0077% |
| NO ₂ 1-hour | 434900.00 | 3323200.00 | 207.9 | 188.0 | 0.0025 | 0.0012% |
| NO ₂ 1-hour | 456900.00 | 3325200.00 | 207.3 | 188.0 | 0.0691 | 0.0333% |
| NO ₂ 1-hour | 462900.00 | 3327200.00 | 206.9 | 188.0 | 0.0327 | 0.0158% |
| NO ₂ 1-hour | 453900.00 | 3327200.00 | 206.7 | 188.0 | 0.0678 | 0.0328% |
| NO ₂ 1-hour | 432900.00 | 3321200.00 | 206.6 | 188.0 | 0.0037 | 0.0018% |
| NO ₂ 1-hour | 453900.00 | 3326200.00 | 206.5 | 188.0 | 0.0397 | 0.0192% |
| NO ₂ 1-hour | 467900.00 | 3329200.00 | 205.7 | 188.0 | 0.0378 | 0.0184% |
| NO ₂ 1-hour | 435900.00 | 3325200.00 | 205.2 | 188.0 | 0.0090 | 0.0044% |
| NO ₂ 1-hour | 452900.00 | 3328200.00 | 204.9 | 188.0 | 0.0503 | 0.0245% |
| NO ₂ 1-hour | 468900.00 | 3330200.00 | 204.5 | 188.0 | 0.0709 | 0.0346% |
| NO ₂ 1-hour | 466900.00 | 3328200.00 | 204.5 | 188.0 | 0.0203 | 0.0099% |
| NO ₂ 1-hour | 468700.00 | 3295300.00 | 204.4 | 188.0 | 0.0174 | 0.0085% |

Predicted Cumulative Concentrations for NAAQS Exceedances at the Commonwealth LNG Project for LNG Stationary and Mobile Sources

| Pollutant Averaging Period | Location of NAAQS Exceedance a/ | | Modeled + Background Concentration ($\mu\text{g}/\text{m}^3$) | NAAQS Standard ($\mu\text{g}/\text{m}^3$) | Project Only Maximum Contribution to NAAQS Exceedance ($\mu\text{g}/\text{m}^3$) | Project Contribution of the Cumulative Concentration (percent) |
|----------------------------|---------------------------------|------------|---|---|--|--|
| | (x) | (y) | | | | |
| NO ₂ 1-hour | 417900.00 | 3289200.00 | 204.4 | 188.0 | 0.0385 | 0.0188% |
| NO ₂ 1-hour | 453900.00 | 3325200.00 | 204.1 | 188.0 | 0.0405 | 0.0198% |
| NO ₂ 1-hour | 456900.00 | 3326200.00 | 204.1 | 188.0 | 0.0396 | 0.0194% |
| NO ₂ 1-hour | 457900.00 | 3325200.00 | 204.0 | 188.0 | 0.0475 | 0.0233% |
| NO ₂ 1-hour | 455900.00 | 3326200.00 | 203.8 | 188.0 | 0.0393 | 0.0193% |
| NO ₂ 1-hour | 452900.00 | 3325200.00 | 203.6 | 188.0 | 0.0404 | 0.0198% |
| NO ₂ 1-hour | 463900.00 | 3327200.00 | 203.0 | 188.0 | 0.0312 | 0.0153% |
| NO ₂ 1-hour | 459900.00 | 3324200.00 | 202.7 | 188.0 | 0.0259 | 0.0128% |
| NO ₂ 1-hour | 452900.00 | 3327200.00 | 202.7 | 188.0 | 0.0511 | 0.0252% |
| NO ₂ 1-hour | 435900.00 | 3324200.00 | 202.5 | 188.0 | 0.0016 | 0.0008% |
| NO ₂ 1-hour | 433900.00 | 3321200.00 | 202.3 | 188.0 | 0.0107 | 0.0053% |
| NO ₂ 1-hour | 465900.00 | 3326200.00 | 202.3 | 188.0 | 0.0373 | 0.0184% |
| NO ₂ 1-hour | 464900.00 | 3328200.00 | 202.2 | 188.0 | 0.0254 | 0.0125% |
| NO ₂ 1-hour | 455900.00 | 3324200.00 | 202.2 | 188.0 | 0.0681 | 0.0337% |
| NO ₂ 1-hour | 430900.00 | 3318200.00 | 202.1 | 188.0 | 0.0247 | 0.0122% |
| NO ₂ 1-hour | 451900.00 | 3328200.00 | 202.0 | 188.0 | 0.0532 | 0.0263% |
| NO ₂ 1-hour | 452900.00 | 3326200.00 | 201.9 | 188.0 | 0.0678 | 0.0336% |
| NO ₂ 1-hour | 458900.00 | 3324200.00 | 201.9 | 188.0 | 0.0637 | 0.0316% |
| NO ₂ 1-hour | 432900.00 | 3320200.00 | 201.8 | 188.0 | 0.0020 | 0.0010% |
| NO ₂ 1-hour | 462900.00 | 3326200.00 | 201.7 | 188.0 | 0.0385 | 0.0191% |
| NO ₂ 1-hour | 464900.00 | 3324200.00 | 201.6 | 188.0 | 0.0298 | 0.0148% |
| NO ₂ 1-hour | 451900.00 | 3327200.00 | 201.3 | 188.0 | 0.0504 | 0.0250% |
| NO ₂ 1-hour | 451900.00 | 3324200.00 | 201.0 | 188.0 | 0.0412 | 0.0205% |
| NO ₂ 1-hour | 452900.00 | 3324200.00 | 200.8 | 188.0 | 0.0498 | 0.0248% |
| NO ₂ 1-hour | 469900.00 | 3331200.00 | 200.4 | 188.0 | 0.0249 | 0.0124% |
| NO ₂ 1-hour | 458900.00 | 3325200.00 | 200.3 | 188.0 | 0.0326 | 0.0163% |
| NO ₂ 1-hour | 434900.00 | 3322200.00 | 200.2 | 188.0 | 0.0161 | 0.0080% |
| NO ₂ 1-hour | 469900.00 | 3329200.00 | 200.2 | 188.0 | 0.0087 | 0.0044% |
| NO ₂ 1-hour | 467900.00 | 3328200.00 | 200.1 | 188.0 | 0.0479 | 0.0239% |

Predicted Cumulative Concentrations for NAAQS Exceedances at the Commonwealth LNG Project for LNG Stationary and Mobile Sources

| Pollutant Averaging Period | Location of NAAQS Exceedance a/ | | Modeled + Background Concentration ($\mu\text{g}/\text{m}^3$) | NAAQS Standard ($\mu\text{g}/\text{m}^3$) | Project Only Maximum Contribution to NAAQS Exceedance ($\mu\text{g}/\text{m}^3$) | Project Contribution of the Cumulative Concentration (percent) |
|----------------------------|---------------------------------|------------|---|---|--|--|
| | (x) | (y) | | | | |
| NO ₂ 1-hour | 464900.00 | 3326200.00 | 199.9 | 188.0 | 0.0474 | 0.0237% |
| NO ₂ 1-hour | 464900.00 | 3325200.00 | 199.8 | 188.0 | 0.0200 | 0.0100% |
| NO ₂ 1-hour | 456900.00 | 3324200.00 | 199.7 | 188.0 | 0.0249 | 0.0124% |
| NO ₂ 1-hour | 466900.00 | 3321200.00 | 199.7 | 188.0 | 0.0368 | 0.0184% |
| NO ₂ 1-hour | 451900.00 | 3326200.00 | 199.5 | 188.0 | 0.0651 | 0.0326% |
| NO ₂ 1-hour | 464900.00 | 3327200.00 | 199.0 | 188.0 | 0.0236 | 0.0118% |
| NO ₂ 1-hour | 461900.00 | 3325200.00 | 198.9 | 188.0 | 0.0188 | 0.0095% |
| NO ₂ 1-hour | 468900.00 | 3329200.00 | 198.7 | 188.0 | 0.0991 | 0.0499% |
| NO ₂ 1-hour | 450900.00 | 3327200.00 | 198.6 | 188.0 | 0.0540 | 0.0272% |
| NO ₂ 1-hour | 455900.00 | 3325200.00 | 198.4 | 188.0 | 0.0565 | 0.0285% |
| NO ₂ 1-hour | 435900.00 | 3327200.00 | 198.3 | 188.0 | 0.0106 | 0.0053% |
| NO ₂ 1-hour | 451900.00 | 3325200.00 | 198.2 | 188.0 | 0.0653 | 0.0329% |
| NO ₂ 1-hour | 450900.00 | 3323200.00 | 198.0 | 188.0 | 0.0424 | 0.0214% |
| NO ₂ 1-hour | 466900.00 | 3327200.00 | 198.0 | 188.0 | 0.0241 | 0.0122% |
| NO ₂ 1-hour | 454900.00 | 3323200.00 | 197.9 | 188.0 | 0.0271 | 0.0137% |
| NO ₂ 1-hour | 462900.00 | 3325200.00 | 197.8 | 188.0 | 0.0136 | 0.0069% |
| NO ₂ 1-hour | 436900.00 | 3326200.00 | 197.5 | 188.0 | 0.0416 | 0.0211% |
| NO ₂ 1-hour | 432900.00 | 3319200.00 | 197.5 | 188.0 | 0.0020 | 0.0010% |
| NO ₂ 1-hour | 466900.00 | 3320200.00 | 197.5 | 188.0 | 0.0397 | 0.0201% |
| NO ₂ 1-hour | 467900.00 | 3327200.00 | 197.5 | 188.0 | 0.0483 | 0.0245% |
| NO ₂ 1-hour | 418900.00 | 3290200.00 | 197.4 | 188.0 | 0.0128 | 0.0065% |
| NO ₂ 1-hour | 450900.00 | 3326200.00 | 197.2 | 188.0 | 0.0478 | 0.0242% |
| NO ₂ 1-hour | 450900.00 | 3328200.00 | 197.2 | 188.0 | 0.0500 | 0.0254% |
| NO ₂ 1-hour | 455900.00 | 3323200.00 | 197.0 | 188.0 | 0.0495 | 0.0251% |
| NO ₂ 1-hour | 468900.00 | 3328200.00 | 196.9 | 188.0 | 0.0386 | 0.0196% |
| NO ₂ 1-hour | 454900.00 | 3325200.00 | 196.9 | 188.0 | 0.0724 | 0.0368% |
| NO ₂ 1-hour | 461900.00 | 3324200.00 | 196.7 | 188.0 | 0.0164 | 0.0083% |
| NO ₂ 1-hour | 434900.00 | 3321200.00 | 196.4 | 188.0 | 0.0023 | 0.0011% |
| NO ₂ 1-hour | 463900.00 | 3326200.00 | 196.1 | 188.0 | 0.0316 | 0.0161% |

Predicted Cumulative Concentrations for NAAQS Exceedances at the Commonwealth LNG Project for LNG Stationary and Mobile Sources

| Pollutant Averaging Period | Location of NAAQS Exceedance a/ | | Modeled + Background Concentration ($\mu\text{g}/\text{m}^3$) | NAAQS Standard ($\mu\text{g}/\text{m}^3$) | Project Only Maximum Contribution to NAAQS Exceedance ($\mu\text{g}/\text{m}^3$) | Project Contribution of the Cumulative Concentration (percent) |
|----------------------------|---------------------------------|------------|---|---|--|--|
| | (x) | (y) | | | | |
| NO ₂ 1-hour | 459900.00 | 3323200.00 | 196.1 | 188.0 | 0.0169 | 0.0086% |
| NO ₂ 1-hour | 451900.00 | 3323200.00 | 195.9 | 188.0 | 0.0614 | 0.0314% |
| NO ₂ 1-hour | 457900.00 | 3324200.00 | 195.7 | 188.0 | 0.0289 | 0.0148% |
| NO ₂ 1-hour | 449900.00 | 3327200.00 | 195.7 | 188.0 | 0.0454 | 0.0232% |
| NO ₂ 1-hour | 450900.00 | 3325200.00 | 195.6 | 188.0 | 0.0602 | 0.0308% |
| NO ₂ 1-hour | 450900.00 | 3324200.00 | 195.6 | 188.0 | 0.0730 | 0.0373% |
| NO ₂ 1-hour | 467900.00 | 3326200.00 | 195.5 | 188.0 | 0.0381 | 0.0195% |
| NO ₂ 1-hour | 449900.00 | 3322200.00 | 195.4 | 188.0 | 0.0355 | 0.0182% |
| NO ₂ 1-hour | 429900.00 | 3317200.00 | 195.2 | 188.0 | 0.0037 | 0.0019% |
| NO ₂ 1-hour | 455900.00 | 3322200.00 | 195.2 | 188.0 | 0.0559 | 0.0287% |
| NO ₂ 1-hour | 458900.00 | 3323200.00 | 195.1 | 188.0 | 0.0346 | 0.0177% |
| NO ₂ 1-hour | 469900.00 | 3330200.00 | 195.0 | 188.0 | 0.0274 | 0.0141% |
| NO ₂ 1-hour | 449900.00 | 3326200.00 | 195.0 | 188.0 | 0.0535 | 0.0275% |
| NO ₂ 1-hour | 466900.00 | 3322200.00 | 194.9 | 188.0 | 0.0451 | 0.0231% |
| NO ₂ 1-hour | 463900.00 | 3322200.00 | 194.5 | 188.0 | 0.0125 | 0.0064% |
| NO ₂ 1-hour | 463900.00 | 3323200.00 | 194.5 | 188.0 | 0.0371 | 0.0191% |
| NO ₂ 1-hour | 463900.00 | 3325200.00 | 194.5 | 188.0 | 0.0369 | 0.0190% |
| NO ₂ 1-hour | 463900.00 | 3321200.00 | 194.4 | 188.0 | 0.0289 | 0.0149% |
| NO ₂ 1-hour | 456900.00 | 3323200.00 | 194.4 | 188.0 | 0.0242 | 0.0125% |
| NO ₂ 1-hour | 460900.00 | 3324200.00 | 194.3 | 188.0 | 0.0357 | 0.0184% |
| NO ₂ 1-hour | 458900.00 | 3322200.00 | 194.2 | 188.0 | 0.1032 | 0.0531% |
| NO ₂ 1-hour | 471900.00 | 3326200.00 | 194.2 | 188.0 | 0.0249 | 0.0128% |
| NO ₂ 1-hour | 457900.00 | 3323200.00 | 194.2 | 188.0 | 0.0196 | 0.0101% |
| NO ₂ 1-hour | 462900.00 | 3324200.00 | 194.1 | 188.0 | 0.0102 | 0.0053% |
| NO ₂ 1-hour | 448900.00 | 3325200.00 | 194.1 | 188.0 | 0.0391 | 0.0201% |
| NO ₂ 1-hour | 465900.00 | 3325200.00 | 194.1 | 188.0 | 0.0217 | 0.0112% |
| NO ₂ 1-hour | 435900.00 | 3323200.00 | 194.0 | 188.0 | 0.0116 | 0.0060% |
| NO ₂ 1-hour | 450900.00 | 3322200.00 | 193.9 | 188.0 | 0.0453 | 0.0234% |
| NO ₂ 1-hour | 466900.00 | 3319200.00 | 193.8 | 188.0 | 0.0959 | 0.0495% |

Predicted Cumulative Concentrations for NAAQS Exceedances at the Commonwealth LNG Project for LNG Stationary and Mobile Sources

| Pollutant Averaging Period | Location of NAAQS Exceedance a/ | | Modeled + Background Concentration ($\mu\text{g}/\text{m}^3$) | NAAQS Standard ($\mu\text{g}/\text{m}^3$) | Project Only Maximum Contribution to NAAQS Exceedance ($\mu\text{g}/\text{m}^3$) | Project Contribution of the Cumulative Concentration (percent) |
|----------------------------|---------------------------------|------------|---|---|--|--|
| | (x) | (y) | | | | |
| NO ₂ 1-hour | 464900.00 | 3323200.00 | 193.7 | 188.0 | 0.0215 | 0.0111% |
| NO ₂ 1-hour | 436900.00 | 3325200.00 | 193.7 | 188.0 | 0.0402 | 0.0208% |
| NO ₂ 1-hour | 454900.00 | 3322200.00 | 193.6 | 188.0 | 0.0466 | 0.0241% |
| NO ₂ 1-hour | 461900.00 | 3323200.00 | 193.6 | 188.0 | 0.0168 | 0.0087% |
| NO ₂ 1-hour | 467900.00 | 3325200.00 | 193.5 | 188.0 | 0.0353 | 0.0183% |
| NO ₂ 1-hour | 454900.00 | 3324200.00 | 193.5 | 188.0 | 0.0556 | 0.0287% |
| NO ₂ 1-hour | 448900.00 | 3321200.00 | 193.4 | 188.0 | 0.0360 | 0.0186% |
| NO ₂ 1-hour | 454900.00 | 3321200.00 | 193.3 | 188.0 | 0.0244 | 0.0126% |
| NO ₂ 1-hour | 453900.00 | 3322200.00 | 193.1 | 188.0 | 0.0289 | 0.0150% |
| NO ₂ 1-hour | 460900.00 | 3323200.00 | 193.1 | 188.0 | 0.0274 | 0.0142% |
| NO ₂ 1-hour | 468600.00 | 3295400.00 | 193.1 | 188.0 | 0.0070 | 0.0036% |
| NO ₂ 1-hour | 468900.00 | 3327200.00 | 193.0 | 188.0 | 0.0532 | 0.0276% |
| NO ₂ 1-hour | 453900.00 | 3321200.00 | 193.0 | 188.0 | 0.0676 | 0.0350% |
| NO ₂ 1-hour | 449900.00 | 3325200.00 | 193.0 | 188.0 | 0.0317 | 0.0164% |
| NO ₂ 1-hour | 453900.00 | 3324200.00 | 192.8 | 188.0 | 0.0746 | 0.0387% |
| NO ₂ 1-hour | 448900.00 | 3326200.00 | 192.7 | 188.0 | 0.0543 | 0.0281% |
| NO ₂ 1-hour | 467900.00 | 3324200.00 | 192.7 | 188.0 | 0.0430 | 0.0223% |
| NO ₂ 1-hour | 466900.00 | 3326200.00 | 192.5 | 188.0 | 0.0206 | 0.0107% |
| NO ₂ 1-hour | 457900.00 | 3322200.00 | 192.5 | 188.0 | 0.0398 | 0.0207% |
| NO ₂ 1-hour | 447900.00 | 3326200.00 | 192.4 | 188.0 | 0.0593 | 0.0308% |
| NO ₂ 1-hour | 436900.00 | 3327200.00 | 192.3 | 188.0 | 0.0443 | 0.0230% |
| NO ₂ 1-hour | 449900.00 | 3323200.00 | 192.2 | 188.0 | 0.0729 | 0.0379% |
| NO ₂ 1-hour | 449900.00 | 3331200.00 | 192.2 | 188.0 | 0.0447 | 0.0232% |
| NO ₂ 1-hour | 448900.00 | 3327200.00 | 192.2 | 188.0 | 0.0426 | 0.0222% |
| NO ₂ 1-hour | 447900.00 | 3324200.00 | 192.2 | 188.0 | 0.0466 | 0.0243% |
| NO ₂ 1-hour | 463900.00 | 3324200.00 | 192.1 | 188.0 | 0.0130 | 0.0068% |
| NO ₂ 1-hour | 468900.00 | 3326200.00 | 192.0 | 188.0 | 0.0315 | 0.0164% |
| NO ₂ 1-hour | 432900.00 | 3318200.00 | 192.0 | 188.0 | 0.0029 | 0.0015% |
| NO ₂ 1-hour | 467900.00 | 3323200.00 | 191.8 | 188.0 | 0.0489 | 0.0255% |

Predicted Cumulative Concentrations for NAAQS Exceedances at the Commonwealth LNG Project for LNG Stationary and Mobile Sources

| Pollutant Averaging Period | Location of NAAQS Exceedance a/ | | Modeled + Background Concentration ($\mu\text{g}/\text{m}^3$) | NAAQS Standard ($\mu\text{g}/\text{m}^3$) | Project Only Maximum Contribution to NAAQS Exceedance ($\mu\text{g}/\text{m}^3$) | Project Contribution of the Cumulative Concentration (percent) |
|----------------------------|---------------------------------|------------|---|---|--|--|
| | (x) | (y) | | | | |
| NO ₂ 1-hour | 456900.00 | 3321200.00 | 191.8 | 188.0 | 0.0280 | 0.0146% |
| NO ₂ 1-hour | 467900.00 | 3321200.00 | 191.8 | 188.0 | 0.0918 | 0.0479% |
| NO ₂ 1-hour | 448900.00 | 3331200.00 | 191.8 | 188.0 | 0.0524 | 0.0273% |
| NO ₂ 1-hour | 456900.00 | 3322200.00 | 191.8 | 188.0 | 0.0252 | 0.0131% |
| NO ₂ 1-hour | 460900.00 | 3322200.00 | 191.7 | 188.0 | 0.0325 | 0.0170% |
| NO ₂ 1-hour | 449900.00 | 3321200.00 | 191.7 | 188.0 | 0.0358 | 0.0187% |
| NO ₂ 1-hour | 457900.00 | 3321200.00 | 191.7 | 188.0 | 0.0225 | 0.0117% |
| NO ₂ 1-hour | 469900.00 | 3328200.00 | 191.6 | 188.0 | 0.0481 | 0.0251% |
| NO ₂ 1-hour | 453900.00 | 3320200.00 | 191.6 | 188.0 | 0.0164 | 0.0085% |
| NO ₂ 1-hour | 449900.00 | 3328200.00 | 191.6 | 188.0 | 0.0407 | 0.0212% |
| NO ₂ 1-hour | 466900.00 | 3324200.00 | 191.5 | 188.0 | 0.0535 | 0.0279% |
| NO ₂ 1-hour | 446900.00 | 3325200.00 | 191.5 | 188.0 | 0.0506 | 0.0264% |
| NO ₂ 1-hour | 458900.00 | 3321200.00 | 191.5 | 188.0 | 0.0115 | 0.0060% |
| NO ₂ 1-hour | 431900.00 | 3317200.00 | 191.4 | 188.0 | 0.0015 | 0.0008% |
| NO ₂ 1-hour | 453900.00 | 3323200.00 | 191.4 | 188.0 | 0.0314 | 0.0164% |
| NO ₂ 1-hour | 466900.00 | 3318200.00 | 191.4 | 188.0 | 0.0248 | 0.0130% |
| NO ₂ 1-hour | 435900.00 | 3322200.00 | 191.4 | 188.0 | 0.0110 | 0.0058% |
| NO ₂ 1-hour | 437900.00 | 3326200.00 | 191.3 | 188.0 | 0.0253 | 0.0132% |
| NO ₂ 1-hour | 467900.00 | 3322200.00 | 191.3 | 188.0 | 0.0792 | 0.0414% |
| NO ₂ 1-hour | 468800.00 | 3295400.00 | 191.2 | 188.0 | 2.7979 | 1.4635% |
| NO ₂ 1-hour | 449900.00 | 3324200.00 | 191.1 | 188.0 | 0.0938 | 0.0491% |
| NO ₂ 1-hour | 462900.00 | 3320200.00 | 191.0 | 188.0 | 0.0125 | 0.0066% |
| NO ₂ 1-hour | 433900.00 | 3319200.00 | 191.0 | 188.0 | 0.0146 | 0.0076% |
| NO ₂ 1-hour | 462900.00 | 3321200.00 | 190.9 | 188.0 | 0.0153 | 0.0080% |
| NO ₂ 1-hour | 467900.00 | 3320200.00 | 190.8 | 188.0 | 0.0874 | 0.0458% |
| NO ₂ 1-hour | 450900.00 | 3329200.00 | 190.8 | 188.0 | 0.0409 | 0.0214% |
| NO ₂ 1-hour | 462900.00 | 3323200.00 | 190.7 | 188.0 | 0.0339 | 0.0178% |
| NO ₂ 1-hour | 447900.00 | 3320200.00 | 190.7 | 188.0 | 0.0556 | 0.0292% |
| NO ₂ 1-hour | 463900.00 | 3320200.00 | 190.7 | 188.0 | 0.0298 | 0.0156% |

Predicted Cumulative Concentrations for NAAQS Exceedances at the Commonwealth LNG Project for LNG Stationary and Mobile Sources

| Pollutant Averaging Period | Location of NAAQS Exceedance a/ | | Modeled + Background Concentration ($\mu\text{g}/\text{m}^3$) | NAAQS Standard ($\mu\text{g}/\text{m}^3$) | Project Only Maximum Contribution to NAAQS Exceedance ($\mu\text{g}/\text{m}^3$) | Project Contribution of the Cumulative Concentration (percent) |
|----------------------------|---------------------------------|------------|---|---|--|--|
| | (x) | (y) | | | | |
| NO ₂ 1-hour | 461900.00 | 3322200.00 | 190.7 | 188.0 | 0.0387 | 0.0203% |
| NO ₂ 1-hour | 436900.00 | 3323200.00 | 190.6 | 188.0 | 0.0536 | 0.0281% |
| NO ₂ 1-hour | 452900.00 | 3322200.00 | 190.5 | 188.0 | 0.0323 | 0.0170% |
| NO ₂ 1-hour | 462900.00 | 3319200.00 | 190.5 | 188.0 | 0.0189 | 0.0099% |
| NO ₂ 1-hour | 459900.00 | 3322200.00 | 190.5 | 188.0 | 0.0116 | 0.0061% |
| NO ₂ 1-hour | 460900.00 | 3321200.00 | 190.5 | 188.0 | 0.0175 | 0.0092% |
| NO ₂ 1-hour | 468900.00 | 3325200.00 | 190.4 | 188.0 | 0.0567 | 0.0298% |
| NO ₂ 1-hour | 447900.00 | 3325200.00 | 190.4 | 188.0 | 0.0542 | 0.0285% |
| NO ₂ 1-hour | 464900.00 | 3322200.00 | 190.4 | 188.0 | 0.0221 | 0.0116% |
| NO ₂ 1-hour | 459900.00 | 3321200.00 | 190.3 | 188.0 | 0.0188 | 0.0099% |
| NO ₂ 1-hour | 462900.00 | 3318200.00 | 190.3 | 188.0 | 0.0089 | 0.0047% |
| NO ₂ 1-hour | 466900.00 | 3317200.00 | 190.3 | 188.0 | 0.0258 | 0.0136% |
| NO ₂ 1-hour | 466900.00 | 3325200.00 | 190.2 | 188.0 | 0.0316 | 0.0166% |
| NO ₂ 1-hour | 457900.00 | 3320200.00 | 190.1 | 188.0 | 0.0150 | 0.0079% |
| NO ₂ 1-hour | 437900.00 | 3328200.00 | 190.1 | 188.0 | 0.0191 | 0.0100% |
| NO ₂ 1-hour | 466900.00 | 3323200.00 | 190.0 | 188.0 | 0.0284 | 0.0150% |
| NO ₂ 1-hour | 430900.00 | 3317200.00 | 190.0 | 188.0 | 0.0229 | 0.0120% |
| NO ₂ 1-hour | 436900.00 | 3324200.00 | 190.0 | 188.0 | 0.0279 | 0.0147% |
| NO ₂ 1-hour | 430900.00 | 3316200.00 | 190.0 | 188.0 | 0.0322 | 0.0169% |
| NO ₂ 1-hour | 456900.00 | 3319200.00 | 189.9 | 188.0 | 0.0181 | 0.0095% |
| NO ₂ 1-hour | 448900.00 | 3322200.00 | 189.9 | 188.0 | 0.0755 | 0.0398% |
| NO ₂ 1-hour | 452900.00 | 3320200.00 | 189.9 | 188.0 | 0.0284 | 0.0150% |
| NO ₂ 1-hour | 452900.00 | 3323200.00 | 189.8 | 188.0 | 0.0772 | 0.0407% |
| NO ₂ 1-hour | 468900.00 | 3324200.00 | 189.7 | 188.0 | 0.0578 | 0.0305% |
| NO ₂ 1-hour | 448900.00 | 3324200.00 | 189.7 | 188.0 | 0.0454 | 0.0239% |
| NO ₂ 1-hour | 446900.00 | 3324200.00 | 189.6 | 188.0 | 0.0319 | 0.0168% |
| NO ₂ 1-hour | 418900.00 | 3289200.00 | 189.6 | 188.0 | 0.0201 | 0.0106% |
| NO ₂ 1-hour | 445900.00 | 3323200.00 | 189.5 | 188.0 | 0.0406 | 0.0214% |
| NO ₂ 1-hour | 451900.00 | 3321200.00 | 189.5 | 188.0 | 0.0241 | 0.0127% |

Predicted Cumulative Concentrations for NAAQS Exceedances at the Commonwealth LNG Project for LNG Stationary and Mobile Sources

| Pollutant Averaging Period | Location of NAAQS Exceedance a/ | | Modeled + Background Concentration ($\mu\text{g}/\text{m}^3$) | NAAQS Standard ($\mu\text{g}/\text{m}^3$) | Project Only Maximum Contribution to NAAQS Exceedance ($\mu\text{g}/\text{m}^3$) | Project Contribution of the Cumulative Concentration (percent) |
|----------------------------|---------------------------------|------------|---|---|--|--|
| | (x) | (y) | | | | |
| NO ₂ 1-hour | 465900.00 | 3324200.00 | 189.4 | 188.0 | 0.0262 | 0.0138% |
| NO ₂ 1-hour | 446900.00 | 3323200.00 | 189.4 | 188.0 | 0.0565 | 0.0298% |
| NO ₂ 1-hour | 462900.00 | 3322200.00 | 189.3 | 188.0 | 0.0192 | 0.0102% |
| NO ₂ 1-hour | 452900.00 | 3319200.00 | 189.3 | 188.0 | 0.0202 | 0.0107% |
| NO ₂ 1-hour | 447900.00 | 3331200.00 | 189.2 | 188.0 | 0.0491 | 0.0259% |
| NO ₂ 1-hour | 461900.00 | 3318200.00 | 189.2 | 188.0 | 0.0169 | 0.0089% |
| NO ₂ 1-hour | 444900.00 | 3322200.00 | 189.1 | 188.0 | 0.0588 | 0.0311% |
| NO ₂ 1-hour | 449900.00 | 3329200.00 | 189.1 | 188.0 | 0.0511 | 0.0270% |
| NO ₂ 1-hour | 452900.00 | 3321200.00 | 189.1 | 188.0 | 0.0276 | 0.0146% |
| NO ₂ 1-hour | 459900.00 | 3320200.00 | 189.0 | 188.0 | 0.0134 | 0.0071% |
| NO ₂ 1-hour | 459900.00 | 3319200.00 | 189.0 | 188.0 | 0.0725 | 0.0383% |
| NO ₂ 1-hour | 468700.00 | 3295100.00 | 189.0 | 188.0 | 0.0930 | 0.0492% |
| NO ₂ 1-hour | 445900.00 | 3325200.00 | 188.9 | 188.0 | 0.0434 | 0.0230% |
| NO ₂ 1-hour | 467900.00 | 3319200.00 | 188.9 | 188.0 | 0.0878 | 0.0465% |
| NO ₂ 1-hour | 466900.00 | 3316200.00 | 188.9 | 188.0 | 0.0389 | 0.0206% |
| NO ₂ 1-hour | 461900.00 | 3317200.00 | 188.8 | 188.0 | 0.0231 | 0.0122% |
| NO ₂ 1-hour | 448900.00 | 3320200.00 | 188.8 | 188.0 | 0.0409 | 0.0216% |
| NO ₂ 1-hour | 433900.00 | 3320200.00 | 188.8 | 188.0 | 0.0271 | 0.0144% |
| NO ₂ 1-hour | 445900.00 | 3324200.00 | 188.7 | 188.0 | 0.0441 | 0.0234% |
| NO ₂ 1-hour | 451900.00 | 3319200.00 | 188.7 | 188.0 | 0.0179 | 0.0095% |
| NO ₂ 1-hour | 451900.00 | 3317200.00 | 188.7 | 188.0 | 0.0420 | 0.0223% |
| NO ₂ 1-hour | 444900.00 | 3324200.00 | 188.7 | 188.0 | 0.0540 | 0.0286% |
| NO ₂ 1-hour | 437900.00 | 3327200.00 | 188.6 | 188.0 | 0.0403 | 0.0214% |
| NO ₂ 1-hour | 455900.00 | 3321200.00 | 188.6 | 188.0 | 0.0191 | 0.0101% |
| NO ₂ 1-hour | 435900.00 | 3321200.00 | 188.5 | 188.0 | 0.0262 | 0.0139% |
| NO ₂ 1-hour | 457900.00 | 3316200.00 | 188.5 | 188.0 | 0.0129 | 0.0069% |
| NO ₂ 1-hour | 461900.00 | 3316200.00 | 188.5 | 188.0 | 0.0080 | 0.0042% |
| NO ₂ 1-hour | 447900.00 | 3333200.00 | 188.5 | 188.0 | 0.0620 | 0.0329% |
| NO ₂ 1-hour | 448900.00 | 3330200.00 | 188.4 | 188.0 | 0.0465 | 0.0247% |

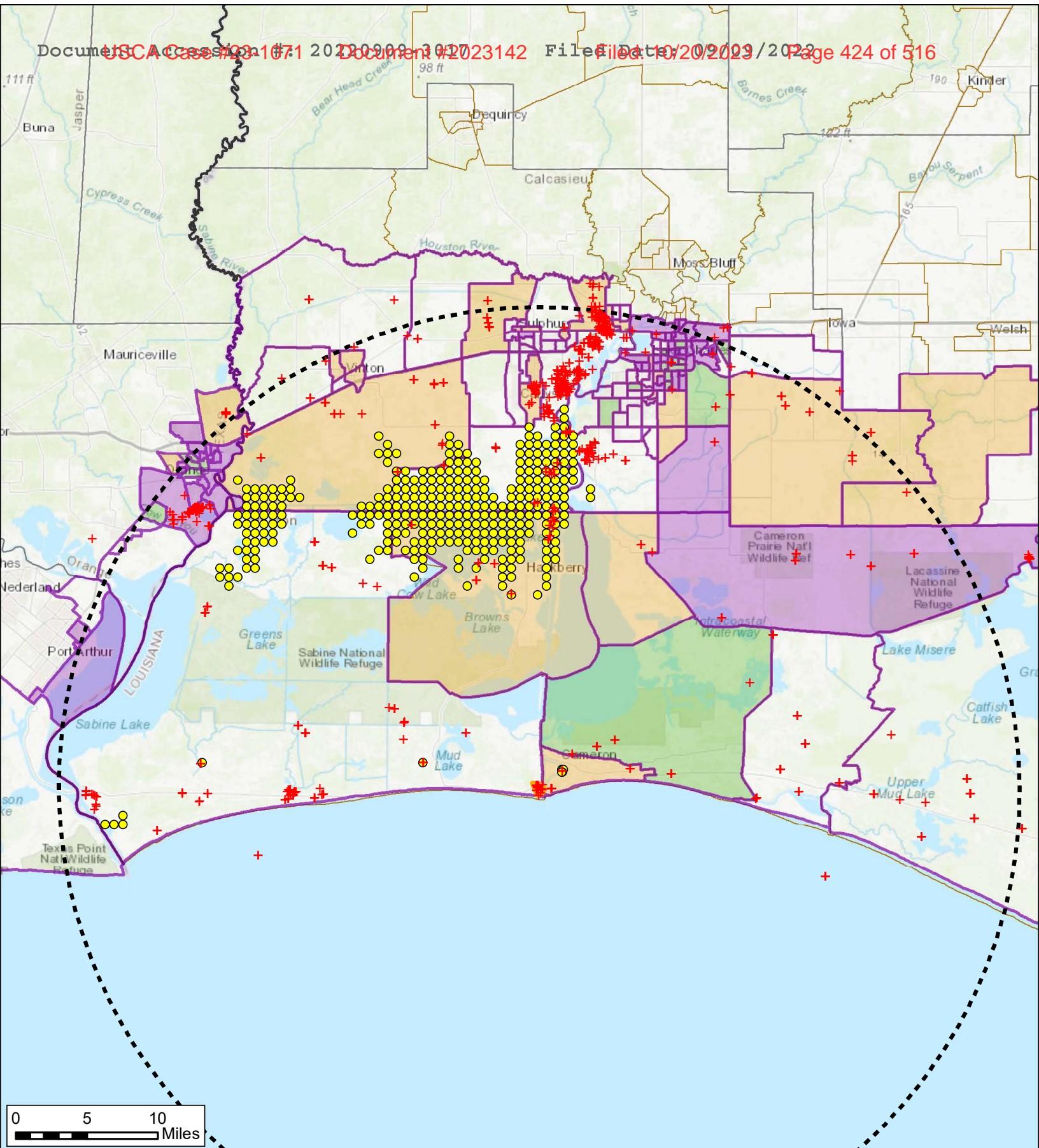
Predicted Cumulative Concentrations for NAAQS Exceedances at the Commonwealth LNG Project for LNG Stationary and Mobile Sources

| Pollutant Averaging Period | Location of NAAQS Exceedance a/ | | Modeled + Background Concentration ($\mu\text{g}/\text{m}^3$) | NAAQS Standard ($\mu\text{g}/\text{m}^3$) | Project Only Maximum Contribution to NAAQS Exceedance ($\mu\text{g}/\text{m}^3$) | Project Contribution of the Cumulative Concentration (percent) |
|----------------------------|---------------------------------|-------------|---|---|--|--|
| | (x) | (y) | | | | |
| NO ₂ 1-hour | 461900.00 | 3319200.00 | 188.4 | 188.0 | 0.0083 | 0.0044% |
| NO ₂ 1-hour | 452900.00 | 3318200.00 | 188.3 | 188.0 | 0.0095 | 0.0050% |
| NO ₂ 1-hour | 433900.00 | 3318200.00 | 188.3 | 188.0 | 0.0017 | 0.0009% |
| NO ₂ 1-hour | 448900.00 | 3323200.00 | 188.3 | 188.0 | 0.0445 | 0.0236% |
| NO ₂ 1-hour | 462900.00 | 3317200.00 | 188.3 | 188.0 | 0.0135 | 0.0071% |
| NO ₂ 1-hour | 465900.00 | 3315200.00 | 188.2 | 188.0 | 0.0254 | 0.0135% |
| NO ₂ 1-hour | 468600.00 | 3295100.00 | 188.2 | 188.0 | 0.0031 | 0.0016% |
| NO ₂ 1-hour | 468900.00 | 3323200.00 | 188.2 | 188.0 | 0.1269 | 0.0674% |
| NO ₂ 1-hour | 448900.00 | 33332200.00 | 188.2 | 188.0 | 0.0516 | 0.0274% |
| NO ₂ 1-hour | 460900.00 | 3320200.00 | 188.2 | 188.0 | 0.0078 | 0.0041% |
| NO ₂ 1-hour | 463900.00 | 3319200.00 | 188.1 | 188.0 | 0.0133 | 0.0071% |
| NO ₂ 1-hour | 446900.00 | 3319200.00 | 188.1 | 188.0 | 0.0489 | 0.0260% |
| NO ₂ 1-hour | 462900.00 | 3315200.00 | 188.1 | 188.0 | 0.0223 | 0.0119% |
| NO ₂ 1-hour | 461900.00 | 3321200.00 | 188.1 | 188.0 | 0.0106 | 0.0056% |
| NO ₂ 1-hour | 450900.00 | 3320200.00 | 188.0 | 188.0 | 0.0281 | 0.0149% |
| NO ₂ 1-hour | 438900.00 | 3326200.00 | 188.0 | 188.0 | 0.0220 | 0.0117% |
| NO ₂ 1-hour | 456900.00 | 3318200.00 | 188.0 | 188.0 | 0.0120 | 0.0064% |
| NO ₂ 1-hour | 451900.00 | 3320200.00 | 188.0 | 188.0 | 0.0194 | 0.0103% |
| NO ₂ 1-hour | 458900.00 | 3320200.00 | 188.0 | 188.0 | 0.0043 | 0.0023% |

a/ UTM NAD83 Zone 5N

APPENDIX I

Environmental Justice Communities and Predicted Project-Only and Cumulative Concentrations for SIL and NAAQS Exceedances of the Commonwealth LNG Project for LNG Stationary Sources



Commonwealth LNG Project

Cameron Parish, Louisiana

Figure 6

Cumulative 1-Hour NO₂ Stationary and Mobile Source Impacts

- [Orange Box] Proposed Site
- [Purple Box] Census Block Groups Assessed
- [Red Plus] Existing Facilities
- [Yellow Dot] Cumulative 1-Hour NO₂ NAAQS Exceedances
- [Light Orange Box] Census Block Groups

APPENDIX M
DRAFT ENVIRONMENTAL IMPACT
STATEMENT COMMENTS AND RESPONSES

Part II

20
1 shouldn't be allowing that. So that's the end of my
2 comments thank you.
3 MR. HANOBIC: Thank you very much for your
4 comment. You comment will be put in the FERC record for
5 this project. Thank you.
6 MS. YODER: Great, thank you so much.
7 MR. HANOBIC: Hi can you hear me?
8 MS. BENOIT: Hello?
9 MR. HANOBIC: Can you hear me?
10 MS. BENOIT: Yes I can.
11 MR. HANOBIC: All right. My name is David
12 Hanobic. I'm an Environmental Project Manager with the
13 Federal Energy Regulatory Commission or FERC. I have on the
14 line with me a consultant John Brewer, who is our contractor
15 for Cardno, and also a Court Reporter. Our job is to
16 conduct an environmental review of the Commonwealth LNG
17 Project, and part of that process is gathering information
18 from the public.
19 We issued our Draft Environmental Impact
20 Statement for the Commonwealth LNG Project on March 31,
21 2022. We are here to listen to your comment on the Draft
22 Environmental Impact Statement, and record that comment in
23 the FERC records for this project.
24 Comments will be addressed in the Final
25 Environmental Impact Statement that is being produced. In a

JA421

1 moment I am going to ask you to state and spell your name
2 for the Court Reporter, and then provide your comment. The
3 Court Reporter will start transcribing your comment for the
4 official record once you state and spell your name, and we
5 will provide a warning once you have approximately 30
6 seconds left.

7 Currently we're probably looking at a five minute
8 time limit. If you do not get to provide all of your
9 comments within the time limit, you can file additional
10 written comments using the directions provided in the Notice
11 of Availability. When you are finished the Court Reporter
12 will stop recording your comment. Are you ready to begin
13 that process?

14 MS. BENOIT: Yes.

15 MR. HANOBIC: Okay. Please state and spell your
16 name for the Court Reporter, and then you may begin your
17 comment when you are done doing that. Go ahead.

18 MS. BENOIT: Mona, M-O-N-A Benoit,

19 B-E-N-O-I-T.

20 MR. HANOBIC: You can begin your comment.

21 MS. BENOIT: Yes. I wish to -- our environment
22 is full of breathing in all this stuff. we don't need
23 anymore we've got more than enough here, so that's enough.
24 We don't need it all here. So we don't need any more plants
25 here. Go build it somewhere else. Thank you.

PM5-1

PM5-1

Purpose and Need of the Project is discussed in section 1.1. Air
impacts of the Project are discussed in section 4.11.1.

JA422

1 primary impacts of wildlife, construction of the terminal,
2 pipeline would be loss of estuarine emergent scrub, scrub,
3 and forest and wetland habitats and chenier habitats which
4 provide nutrients, cover, shelter, water for a variety of
5 terrestrial and aquatic species including water fowl, wading
6 birds, nesting birds, raptors, mammals, reptiles, amphibians,
7 construction of the terminal and said pipeline would cause
8 displacement, stress, direct mortality of individual
9 wildlife species that use these types of habitats.
10 Operation of the terminal would result in
11 increased noise, lighting, human activity that could disturb
12 wildlife in the area and a reduction of usable habitat for
13 most wildlife species currently inhabiting the area. And
14 that -- I am quoting directly from page 1-5 in your
15 introduction.
16 So there is no way that these minor positive
17 economic impacts and the goal of Commonwealth export
18 domestic LNG overseas is, will overwhelm the need to go no
19 further action on this permit.
20 All right. Now I think I'm done, Miss Nancy.
21 MS. FOX: Okay, great. Thank you so much for
22 your comments, John, and we will include them in the record.
23 MR. ALLAIRE: All right. Thank you all for
24 letting us get a word in.
25 MS. FOX: Okay, bye.

JA423

1 limit, you can file additional written comments using the
2 directions provided in the Notice of Availability.
3 When you are finished, the court reporter will
4 stop recording your comment. Are you ready to begin the
5 process?

6 MS. HOPKINS: Sure.

7 MS. FOX: Okay. Please say and state your name
8 for the court reporter, and then you may begin your comment.
9 MS. HOPKINS: My name is Lees Hopkins, L-e-e-s
10 H-o-p-k-i-n-s. I am opposed to the Commonwealth Liquefied
11 Natural Gas facility. It is not going to -- we are not
12 going to be able to meet our climate goals as a State, and
13 from what I understand about the Louisiana Action Plan, you
14 know -- if this plant goes through, we're not going to be
15 able to make those targets, and I would like our State to be
16 working in collaboration with the rest of the planet to
17 fight climate change and not approve facilities like this.
18 I also understand that this report doesn't look
19 at the kind of cumulative impacts of all of the already-
20 existing types of facilities in the area, and that's
21 concerning because it's not just one more facility. In fact,
22 it's one more facility on top of many other facilities in
23 the area, and I know that air pollution is a big issue, and
24 I'm also concerned about potential other issues that can
25 come up, pollution-wise, leaked, what have you; accidents,

PM7-1 See response to comment PM2-1.

PM7-2

Cumulative Impacts of the Project area addressed in section 4.13;
air quality impacts are discussed in section 4.11.; and the safety
of the Terminal is discussed in section 4.12.1.

1 explosions. None of that's okay with me. And I want this
2 liquefied natural gas plant to not exist in Louisiana.

3 That's all I have to say.

4 MS. FOX: Okay, thank you so much for your
5 comment, which will be included in the public record and
6 considered in our review of the project.

7 MS. HOPKINS: Thank you very much. Bye.

8 MS. FOX: Thank you. Bye.

9 (Pause)

10 MS. FOX: Hi there, John, can you hear me?

11 MR. ALLAIRE: I can, Nancy.

12 MS. FOX: Hi there, again. I'm not going to read
13 this whole thing to you again because you already know
14 the --

15 MR. ALLAIRE: Oh, yes.

16 MS. FOX: If you want to just -- if you'd say and
17 spell your name for the court reporter, you can begin your
18 comment.

19 MR. ALLAIRE: Already. My name is John, J-o-h-n
20 Allaire, A-l-l-a-i-r-e. I am an adjoining landowner to the
21 proposed Commonwealth LNG site. Back in 2021 I submitted
22 comments with regard to the air permit modeling information
23 source that Commonwealth LNG. They chose to use the Lake
24 Charles Regional Airport, that is 41 kilometers away from
25 the site, rather than the NOAA weather station which is

PM8-1

PM8-1

As noted in section 4.11.1.6, use of the Lake Charles Regional
Airport is based on guidance specified by LDEQ in its Modeling
Procedures, the publishing date notwithstanding. In written
communication provided to Commonwealth on June 16, 2022
(see appendix C of accession number 20220624-5165), LDEQ
confirmed its approval of Commonwealth's use of this
meteorological station.

JA425

1 MR. ALLAIRE: Hello, Nancy, again.
2 MS. FOX: Feel free to just -- I think the court
3 reporter has the spelling of your name, so feel free to just
4 go ahead and state your comment.

5 MR. ALLAIRE: All right. John Allaire again.

6 In the Draft EIS document, I'm concerned about
7 Appendix G. Appendix G is the list of the document
8 preparers for this Draft EIS. Of the 36 document preparers,
9 none of the academic records presented in this appendix
10 indicates that any of the preparers of the document attended
11 a Louisiana institution of higher learning or university in
12 the State of Louisiana.

13 I think that there could be some potential bias
14 here against the state of Louisiana; the fact that none of
15 the preparers listed have attended a university or
16 institution of higher learning in the state of Louisiana.
17 That's my comment with regard to that.

18 MS. FOX: Okay, great. Thank you so much for
19 your comment. You have about 20 minutes left to call in
20 with another one.

21 MR. ALLAIRE: All right. Thank you, ma'am.

22 MS. FOX: Have a good evening.

(Pause)

23
24 MS. FOX: Hi, there. My name is Nancy Fox-
25 Hernandez, and I am an environmental project manager with

15

PM8-7

PM8-7

1 the Federal Energy Regulatory Commission, or FERC. I have
2 on the line with me my coworker Jenifer Fink, and John
3 Brewer, and a court reporter.

4 My job is to conduct an environmental review of
5 the Commonwealth LNG Project, and part of that process is
6 gathering information from the public.

7 We issued our Draft Environmental Impact
8 Statement for the Commonwealth LNG Project on March 31st,
9 2022. We are here to listen to your comment on the Draft
10 Environmental Impact Statement and record that comment in
11 the FERC record for this project. Comments will be
12 addressed in the Final Environmental Impact Statement that
13 will be issued on September 9th, 2022.

14 In a moment I'm going to ask you to say and spell
15 your name for the court reporter, and then provide your
16 comments. The court reporter will start transcribing your
17 comment for the official record once you say and spell your
18 name.

19 When you are finished, the court reporter will
20 stop recording your comment. Are you ready to begin the
21 process?

22 MS. ROLLO: Yes.
23 MS. FOX: Okay. Please say and state your name
24 for the court reporter, and then you may begin your comment.
25 MS. ROLLO: Vera, V-e-r-a Rollo, R-o-l-l-o.

JA427

17

1 MS. FOX: You can start the comment.

2 MS. ROLLO: I am against this deal they're

PM9-1

Comment noted.

3 talking about. If it's not going to do anything for us,
4 that's no good. So I'm against it. If we're not going to
5 profit from it, well, that's not good.

6 MS. FOX: Okay. If that's all your comment, then
7 thank you very much, Vera for your comment, and it will be
8 included in the public record and considered in our review
9 of the project. You can now end the call.

10 MS. ROLLO: Thank you.

11 (Paused)

12 MS. FOX: I hear John again. This is Nancy.

13 MR. ALLAIRE: John again, Nancy.

14 MS. FOX: Hello. Go ahead and say your name, and
15 you can start your comment.

16 MR. ALLAIRE: John Allaire.

17 On page 1-10 of the introduction in the Draft

18 Environmental Impact Statement, FERC states: Our analysis
19 of cumulative impacts includes other projects in the

20 vicinity of proposed Commonwealth project effects.

Impacts on coastal wetlands and vegetation are discussed in
sections 4.4 and 4.5. The cumulative impacts of the
Commonwealth project on coastal wetlands and vegetation are
discussed in sections 4.13.2.3 and 4.13.2.4. The cumulative
impacts section assesses the combined impacts of the two (or
more) projects on the respective resources at the respective
project sites

PM10-1

Same research of the project in the same
approximate time frame. We generally conclude that the
potential of the project combined with the impacts from the
other projects considered in their geographic scopes, will
not result in significant impacts on resources.

JA428

21

1 Administration for the U.S. Government states: This is one
2 of the two primary factors in LNG rising consumer rates
3 across the United States.

4 And I think that's my final one, Nancy.

5 MS. FOX: Thanks so much for your comment, John,
6 for your comments. They will be included in the record. We
7 appreciate your input.

8 MR. ALLAIRE: All right. You all have a great
9 evening and thank you for your time today.

10 MS. FOX: Thank you. Bye.
11 (Pause)

12 MS. FOX: Let the record show that the scoping
13 session for the Commonwealth DEIS closed at 5:30 p.m. on
14 April 26, 2022.

15 Thanks, everybody.

16 [Thereupon, at 5:30 p.m. (EST), the scoping
17 session concluded.]

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JA429

1 CERTIFICATE OF OFFICIAL REPORTER

2
3 This is to certify that the attached proceeding
4 before the FEDERAL ENERGY REGULATORY COMMISSION in the
5 Matter of:

6 Name of Proceeding:

7 Commonwealth LNG, LLC

8

9

10

11

12 Docket No.: CEP19-502-000

13 CPI9-502-001

14 Place: Virtual

15 Date: Tuesday, April 26, 2022

16 were held as herein appears, and that this is the original
17 transcript thereof for the file of the Federal Energy
18 Regulatory Commission, and is a full correct transcription
19 of the proceedings.

20

21 Mike Williams
22 Official Reporter
23
24
25

JA430

FEDERAL ENERGY REGULATORY COMMISSION
888 First Street, NE
WASHINGTON, D.C. 20428

OFFICE OF ENERGY PROJECTS

In Reply Refer To:
OEP/DG2E/Gas 4
Commonwealth LNG, LLC
Commonwealth LNG Project
Docket Nos. CP19-502-000 and
CP19-502-001

March 31, 2022

VIA Electronic Mail

Rusty Swafford
Acting Assistant Regional Administrator
National Marine Fisheries Service
Habitat Conservation Division, Southeast Region
rusty.swafford@noaa.gov

RE: Commonwealth LNG Project – Essential Fish Habitat Assessment

Dear Mr. Swafford:

Commonwealth LNG, LLC (Commonwealth) filed an application with the Federal Energy Regulatory Commission (FERC) for authorization to construct, own, and operate the Commonwealth LNG Project (Project). Commonwealth requests authorization pursuant to section 3(a) of the Natural Gas Act (NGA) to construct, operate, and maintain a liquefied natural gas (LNG) export Terminal and natural gas pipeline system in Cameron Parish, Louisiana. The staff of the FERC issued a draft environmental impact statement (EIS) for the Project on March 31, 2022. As required by the Magnuson-Stevens Fishery Conservation and Management Act, and as described in the EIS, I am requesting an essential fish habitat (EFH) consultation with your office for the Project.

Commonwealth proposes to construct the following facilities as part of the proposed Project:

- six liquefaction trains at the Commonwealth LNG Terminal, each with a nominal capacity of 1.4 million tons per annum of LNG for export, resulting in the total nominal capacity of 8.4 million tons per annum;

JA431

- six LNG storage tanks, each with a net capacity of 50,000 cubic meters;
- a new marine facility with one LNG vessel berth to accommodate loading of LNG vessels with capacities ranging from 10,000 to 216,000 cubic meters, an LNG vessel and support vessel maneuvering area, and an overwater barge dock;
- an approximately 2,500-foot-long earthen stormwater culvert along the west and south sides of the Terminal perimeter to convey stormwater and drainage from the wetlands west of the Terminal to the Calcasieu River;
- two flare systems;
- utilities (e.g., electricity generation, water, plant air, nitrogen, hot oil system);
- operation and safety systems (e.g., access and haul roads, storm protection structures, stormwater drainage systems, spill containment system, fire suppression facilities, facility lighting and security, emergency shutdown systems);
- appurtenant facilities (e.g., administrative facilities, maintenance and warehouse buildings, marine facility operator buildings, equipment enclosures and electrical rooms); and
- 3.0 miles of 42-inch-diameter pipeline, including two interconnection facilities, one metering station, and one pig¹ launcher facility.

Please refer to the EIS for maps and other Project-specific information.

The proposed Project would require dredging and in-water pile driving to construct the LNG vessel berth and biennial dredging to maintain the depth of the vessel berth. Construction of the LNG terminal would permanently fill 11.9 acres of tidally influenced emergent wetlands,² 1.6 acres of tidal slough habitat, and 1.2 acres of open water; and construction of the pipeline would temporarily affect about 43.6 acres of tidally influenced emergent wetlands along the 3.0-mile right-of-way and

¹ A “pig” is a device that travels within a pipeline and is used to clean and dry the pipeline and/or to inspect it for damage or corrosion

²

INDIVIDUALS

IND5- JOHN ALLAIRE

Document Accession #: 20220511-5089 Filed Date: 05/11/2022

permanently fill 0.3 acre of tidally influenced emergent wetlands to construct the aboveground facilities. Essential Fish Habitat for post larval and juvenile stages of white shrimp, brown shrimp, red drum, red snapper, gray snapper, lane snapper, gray triggerfish, cobia, greater amberjack, king mackerel, Spanish mackerel, scalloped hammerhead shark, blacktip shark, and Atlantic sharpnose shark occurs in the Project area. We request that NMFS consider the draft EIS (section 4.6.3) as our initiation of EFH consultation. We will update our EFH assessment and consultation with NMFS, if necessary, as we receive additional Project information from Commonwealth.

We request any potential recommendations you may have for EFH conservation measures and request your ultimate concurrence with our assessment. If you have any questions or concerns regarding this request, please contact Nancy Fox-Fernandez, environmental project manager, at (202) 502-8559.

Sincerely,



Danny Laffoon,
Chief, Gas Branch 1
Division of Gas – Environment
and Engineering

Cc: VIA Electronic Mail

January Murray
NOAA Fisheries
National Oceanic and Atmospheric Administration
Habitat Conservation Division
January.Murray@noaa.gov

-3-

JA433

Document Accession #: 20220523-5010 Filed Date: 05/23/2022

**Comments on Docket CP19-502-000 to FERC in response to Draft EIS Report
(DEIS) Dated March 31, 2022. Comments on Introductory Statements with
Regard to Wildlife Resources and Project Sighting.**

I am a local property owner whose residence is located directly west of the proposed project site. All of my 311 acres of coastal wetlands adjoin the western boundary of the proposed CWLNG site. I am a degreed professional with over thirty of experience in the environmental field. I have worked as an Environmental Engineer, Environmental Coordinator and an Environmental Manager for one of the world's largest Oil and Gas companies in the world. Over 40 years of my career were spent working in Texas and Louisiana drilling for, producing and refining oil and gas reserves for consumption by US consumers, manufacturers and industries. My credentials are available upon request.

In **Section 4.4.1.1** of the DEIS titled **Terminal** FERC states the following: "A total of 95.9 acres of wetlands would be impacted by construction of the Terminal, of which 89.6 acres would be permanently impacted for operations and 6.3 acres would be temporarily impacted during construction for a construction and laydown area. The 6.3 acres that would be temporarily impacted for the construction and laydown area and 65.8 acres of the permanently impacted area are **BEM** wetlands. The remaining permanent impact area consists of ESS (9.5 acres) and EFO (14.3 acres) wetlands. The majority (about 81 percent) of the Terminal site is comprised of wetlands."

On Page 1-5 of the DEIS Introduction under heading **Wildlife Resources** FERC states the following: "The primary impact on wildlife from construction of the Terminal and Pipeline would be the loss of estuarine emergent, scrub shrub, and forested wetland habitats and chenier habitat, which provide nutrients, cover, shelter, and water for a variety of terrestrial and aquatic wildlife species, including wading birds, nesting birds, raptors, mammals, reptiles, and amphibians. Construction of the Terminal and Pipeline could cause displacement, stress, and direct mortality of individual wildlife species that use these types of habitats. Operation of the Terminal would result in increased noise, lighting, and human activity that could disturb wildlife in the area and a reduction of usable habitat for most wildlife species currently inhabiting the area. However, due to the existing heavy ship traffic and other industrial uses along the Calcasieu Ship Channel, most wildlife in the area are likely accustomed to the noise and artificial lighting associated with these activities. Operation of the Pipeline would require minimal lighting, activities, or other disturbances that would affect wildlife."

The wetland and chenier habitats in the Project area are especially important as potential habitat for migratory bird species, including songbirds, colonial nesting waterbirds, and raptors. The Project is within the Gulf Coast Prairie Bird Conservation Region and the Chenier Plain Important Bird Area. Chenier habitat provides critical in-transit habitat for migrating birds prior to and after crossing the Gulf of Mexico. Commonwealth consulted with the FWS and LDWF to determine measures Commonwealth would implement to avoid and minimize impacts on migratory birds. Measures include attempting to add **Attachment A** vegetation clearing restriction window of March 1 through July 31, adhering to FWS-recommended conservation measures related to minimizing impacts from flares and lighting, conducting pre-construction field surveys for evidence of colonial nesting waterbird rookeries and consulting FWS and LDWF if any are found, and protecting chenier habitat present in the Project area that would not be affected by construction.

We conclude that constructing and operating the Project would not significantly affect wildlife populations and wildlife habitat."

Some of the statements and conclusions as stated in this DEIS are inaccurate and misleading. As stated above "Chenier habitat provides critical in-transit habitat for migrating birds prior to and after crossing the Gulf of Mexico." Then FERC states "The primary impact on wildlife from construction of the Terminal and Pipeline would be the loss of estuarine emergent, scrub shrub, and forested wetland habitats and chenier habitat, which provide nutrients, cover, shelter, and water for a variety of terrestrial and aquatic wildlife species, including wading birds, nesting birds, raptors, mammals, reptiles, and amphibians. Construction of the Terminal and Pipeline could cause displacement, stress, and direct mortality of individual wildlife species that use these types of habitats.

JA434

INDIVIDUALS

ND10- JOHN ALLAIRE

Document Accession #: 20220523-5010

Filed Date: 05/23/2022

USCA Case #23-1071

Document #2023142

Filed: 10/20/2023

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IND10-1 The potential impacts of the Project on wildlife species are discussed in section 4.6.1.

These are very true statements. They then go on to conclude the following: "However, due to the existing heavy ship traffic and other industrial uses along the Calcasieu Ship Channel, most wildlife in the area are likely accustomed to the noise and artificial lighting associated with these activities." This is an incorrect and misleading conclusion. Permanent loss of 65.8 acres of Estuarine Emergent marsh and 14.4 acres of Estuarine Forest at the project site will not only destroy that habitat it will significantly affect adjoining marshes and their resident species. The existing Chenier forest and emergent marsh habitat you are describing and CWLNG will be destroying, currently provides a natural sound and light barrier from the existing heavy ship traffic and other industrial uses along the Calcasieu Ship Channel. These existing features shield the existing migratory and resident wildlife species from exactly the stress, and direct mortality of individual wildlife species from the increased noise, lighting, and human activity described above. Removal of these existing barriers will destroy the wildlife habitat at the site and cause a significant reduction of usable habitat for all of the wildlife species by degrading the habitat in the adjoining marsh.

In the DEIS the following statement is made: "Measures include attempting to adhere a vegetation clearing-restriction window of March 1 through July 31, adhering to FWS-recommended conservation measures related to minimizing impacts from flares and lighting, conducting pre-construction field surveys for evidence of colonial nesting waterbird rookeries and consulting FWS and LDWF if any are found, and protecting cheron habitat present in the Project area that would not be affected by construction."

This DEIS fails to define what "attempting to adhere a vegetation clearing-restriction window of March 1 through July 31. Will adherence to this restriction be a permit condition or just an attempt to comply with as is stated above. Either they are going to be required to adhere to restrictions or they will not adhere.

The second measure states that CWLNG will "adhere to FWS-recommended conservation measures related to minimizing impacts from flares and lighting". Venture Global Calcasieu Pass Facility flared almost continuously from their commissioning date in January through the end of April. In a period from January 27, 2022 until April 27, 2022 Venture Global flared night and day throughout the prime neo-tropical bird migration period. There were 5 only days during this 90 day period when they were not flaring. See attached photographs and I will provide additional time and date stamped photos upon request. CWLNG states that they will be flaring only 12 days per year in the DEIS. Please define in the EIS what measures will be taken if the proposed project is approved to prevent similar flaring events from occurring at the CWLNG site.

The third measure states that CWLNG will conduct pre-construction surveys for nesting bird colonies. I have been at the site on a daily basis for the past three months and have observed nesting mottled ducks, blue wing teal, black bellied whistling ducks, American avocets, black neck stilts' and many other species of shorebirds. Please confirm that the appropriate agency representatives will assist in or witness these pre-construction surveys. Additionally, I would request that these surveys will be used, in required annual follow up surveys, as a baseline for determining that wild life populations and habitat have not be significantly affected as is stated by FERC in the DEIS. As a side note several Black Rails have been located on the property adjoining the proposed CWLNG facility as recently as of May 2022.

How can the public be expected to respond intelligently to the project's environmental affects if incomplete, inaccurate and misleading information and conclusions are presented in the DEIS. I respectfully request at a minimum that FERC formally withdraw this DEIS until they can provide the public with complete and accurate information related to this project. If these issues cannot be investigated and resolved I would respectfully request that the Under the No-Action Alternative, the Project should not be permitted at this environmentally productive and sensitive area.

Thank for your attention to this matter.

John Allaire BS/MS

IND10-2 As noted in section 4.6.1, if the construction schedule requires clearing during the migratory bird nesting season, Commonwealth would consult with the FWS regarding appropriate methods to minimize impacts on migratory birds.

IND10-3 IND10-4

As noted in section 4.6.1, Commonwealth's revised flaring duration and the potential impacts of flaring on migratory birds are provided in sections 2.1.1.4, 4.6.1.3, and 4.11.2.4

As noted in section 4.6.1, Commonwealth would conduct field surveys for colonial waterbird nesting colonies using qualified biologists no more than 2 weeks prior to the commencement of construction, should construction clearing occur between February 15 and September 15.

JA435

Comments on Docket CP19-502-000 to FERC in response to Draft EIS Report (DEIS) Dated March 31, 2022. Comments with Regard to Project Purpose, Conclusions and Bias.

I am a local property owner whose residence is located directly west of the proposed project site. All of my 311 acres of coastal wetlands are adjin the western boundary of the proposed CWLNG site. I am a degreed professional with over thirty of experience in the environmental field. I have worked as an Environmental Engineer, Environmental Coordinator and an Environmental Manager for one of the world's largest Oil and Gas companies in the world. Over 40 years of my career were spent working in Texas and Louisiana drilling for, producing and refining oil and gas reserves for consumption by US consumers, manufacturers and industries. My credentials are available upon request.

Commonwealth states that the purpose and objective of the proposed Project is "to liquefy and export to foreign markets, domestically produced natural gas sourced from the existing interstate and intrastate pipeline systems of Kinteka and Bridgefile, respectively, in southwest Louisiana." FERC

In the DEIS Introduction under the Socioeconomics section FERC states the following: "Construction of the Project would result in minor positive economic impacts due to increases in construction jobs, payroll taxes, purchases made by the workforce, and expenses associated with the acquisition of material goods and equipment. Operation of the Project would have a minor positive effect on the local governments tax revenues due to the increase in property taxes that would be collected. Construction of the Project would not have a significant adverse impact on local populations, employment, and provision of community services, housing, or property values."

FERC goes on the state: "The proposed Project would have a range of impacts on the environment and on individuals living in the vicinity of the Project facilities, including environmental justice populations. Based on the scope of the Project and our analysis of the Project's impacts on the environment, we have determined Project-related impacts on wetlands, surface water, aquatic resources, visual resources, recreation, socioeconomics, traffic, noise, and air quality may adversely affect the identified environmental justice communities. In general, the magnitude and intensity of the impacts would be greater for individuals and residences closest to the Project's facilities and would diminish with distance. Based on our analysis, the impacts experienced by the environmental justice community in the Project area would not be predominately borne by the environmental justice community. Therefore, impacts would not be disproportionately high and adverse as the Project would not be located in an environmental justice community and the closest residents are not located in an environmental justice community." Yes these impacts will be borne by all of the local communities. "However, environmental justice communities would experience significant impacts associated with the viewshed of the new Terminal facilities. Regarding environmental justice communities, we have determined environmental justice communities in the study area would experience cumulative impacts on wetlands, surface water, aquatic resources, socioeconomics, traffic, noise, air quality, greenhouse gas (GHG) and significant visual cumulative impacts related to the Project and the additional projects within the respective geographic scope of the Project." In these comments FERC mentions several adverse affected communities and significant and cumulative impacts on the environment and the local communities which are somewhat diminished with distance. I would agree with this part of FERC's conclusions that the further away from this proposed noisy, pollution spewing, wetlands destroying, wildlife taking and veinshed altering facility the impacts will be reduced.

FERC goes on to state: "Independent of whether the Project is constructed, other LNG export projects may still be developed in the Gulf Coast region or elsewhere in the United States and these projects would cause both adverse and beneficial impacts on the environment. Under the No-Action Alternative, the

IND12-1

JA436

INDIVIDUALS

ND12- JOHN ALLAIRE

Document Accession #: 20220523-5039

Filed Date: 05/23/2022

USCA Case #23-1071

Document #2023142

Filed: 10/20/2023

Page 442 of 516

Project would not be developed and Commonwealth's objective of liquefying and exporting natural gas to foreign markets would not be realized." Under the NO-Action Alternative the exporting of natural gas to industries would not be realized and costs of energy for US domestic consumers, manufacturers and services, As has been reported in many studies the people on the lower economic ladder and fixed incomes suffer the most with increased inflation. In recent publications the US Energy Information Administration (USEIA) has reported that increases in domestic use of dirty coal by US electric power providers. In an August 2021 report, the USEIA reported that higher US natural gas prices could be tied directly to rising consumption for sectors other than electric power providers and growth in exports of LNG. How is expanded permitting of these energy export terminals consistent with the public interest.

In the DEIS Introduction under title Cumulative Impacts FERC states the following: "Our analysis of cumulative impacts includes other projects in the vicinity of the proposed Commonwealth Project that could affect the same resources as the Project in the same approximate timeframe. We generally conclude that the potential impacts of the Project, when combined with the impacts from the other projects considered in the geographic scopes, would not result in a significant impact on resources." These statements are inaccurate, 80 % of the Global Venture Calcasieu Pass facility was built on mostly predisturbed land. The GV facility was built on land that was used to deposit dredge spoils during the construction of the Calcasieu River Ship Channel beginning in the 1920 and in subsequent maintenance dredging projects. Much of the Global Venture site was also part of the former Calcasieu Pass Gas Field. This changed the entire dynamics of the Global Venture project site. Piles of dredge spoils and old well locations at the Venture Global project site can be observed on USGS quadrangle maps. See attached USGS 1982 Cameron Quadrangle. 80% of the Global Venture facility was built on pre disturbed land. Less than 15% of the proposed CWLNG pipeline, marine berth and facility footprints has been disturbed by other than minor human activity. Global Ventures project EIS described the following for permanent wetlands loss: 20.9 acres of estuarine emergent wetlands (EEM), .7 acres of estuarine scrub-scrub and 0 acres of estuarine forest. The CWLNG DEIS lists the permanent loss of 65.8 acres of estuarine emergent wetlands, 20.9 acres of estuarine forest (Chenier's) and 9.5 acres of estuarine scrub-scrub which is prime black rail habitat. No accurate comparative conclusion can be drawn between clearing estuarine forest, backfilling EEM and concreting over Chenier's and wetlands at the CWLNG proposed location and what has occurred at the GV facility. FERC also states "Commonwealth's proposed mitigation measures would minimize or offset Project impacts on local resources." There is no way that any proposed mitigation measures can minimize or offset the loss of these Chenier and wetland habitats that took nature tens of thousands of years to create.

With regard to bias in preparing this document I noted the following. In the List of Preparers for the DEIS not one of the 34 preparers listed an academic credential from a State of Louisiana institution of higher learning, college or university. I am very concerned with the apparent location bias in sighting these projects in Louisiana and Texas. I am also very concerned about the increasing detrimental effects of energy and consumer product inflation on lower and fixed income families in the US due to FERC's continued permitting of these energy export facilities. I respectfully request that FERC implement the NO-Action Alternative for this and other similar domestic energy export projects.

Thank for your attention to this matter.

John Allaire BS/MS Physical Sciences

Project and Need is discussed in section 1.1. The Commission will determine if the project meets the public interest standard provided in section 3(a) of the Natural Gas Act. 15 U.S.C. § 717b(a).

IND12-2

Purpose and Need is discussed in section 1.1. The Commission will determine if the project meets the public interest standard provided in section 3(a) of the Natural Gas Act. 15 U.S.C. § 717b(a).

See the response to comment PM10-1.

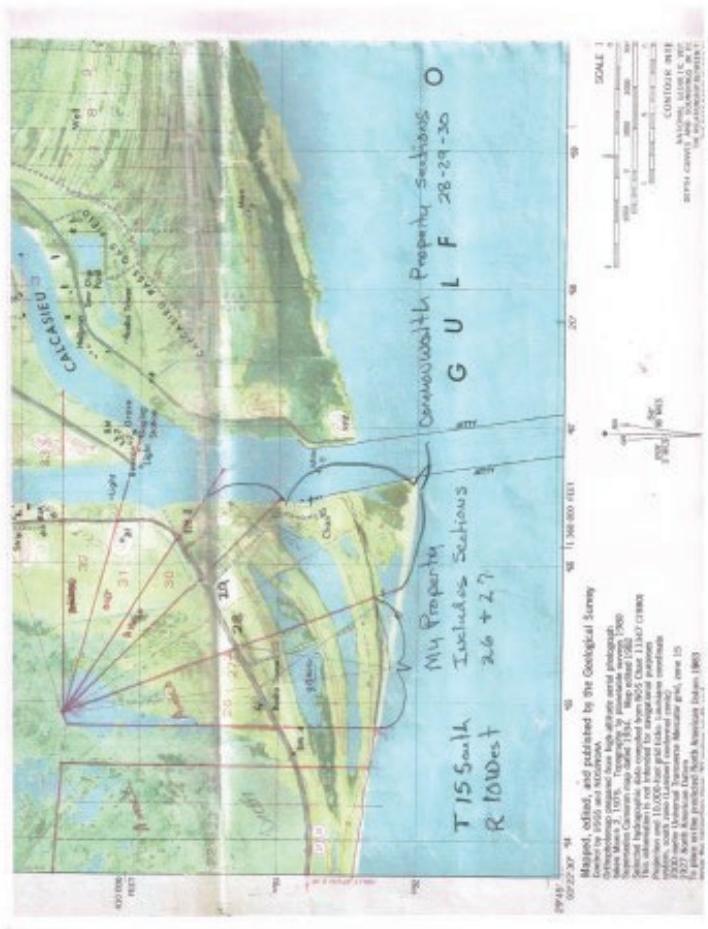
The subject of preparer bias is addressed in the response to comment PM8-7. Regarding the comment's statement of location bias in siting projects in Louisiana and Texas, the oil and gas industry is well established in Louisiana and Texas and the location of these projects does not indicate bias against the states. The Project Purpose and Need is discussed in section 1.1.

IND12-3

IND12-4

IND12-4

IND12-5



JA438

Document Accession #: 20220523-5041

Filed Date: 05/23/2022

Comments on Docket CP19-502-000 to FERC in response to Draft EIS Report (DEIS)
Dated March 31, 2022. Comments on Ocean Dumping

I am a local property owner whose residence is located directly west of the proposed project site. All of my 311 acres of coastal wetlands are adjoin in the western boundary of the proposed CWLNG site. My property includes 3000' of shoreline on the Gulf of Mexico which is directly north of the proposed dumping area for the CWLNG dredge spoils. See attached USGS map. I am a degreed professional with over thirty of experience in the environmental field. I have worked as an Environmental Engineer, Environmental Coordinator and an Environmental Manager for one of the world's largest Oil and Gas companies in the world. Over 40 years of my career were spent working in Texas and Louisiana drilling for, producing and refining oil and gas reserves for consumption by US consumers, manufacturers and industries. My credentials are available upon request.

In Commonwealth's Response for Information Request Dated February 18, 2022, in which Commonwealth responded to FERC's inquiry regarding dredge disposal locations and the mitigation of impacts to estuarine water bottoms Commonwealth responded that they abandoned their plans to mitigate by BUDM and instead were utilizing compensatory mitigation credits and coordinating with the Corps to conduct near shore disposal of the marine berth dredge material.

In the introduction of the DEIS CWLNG or FERC stated that the Dredging of the marine facility and subsequently placing the dredge spoils at a nearshore dredge materials placement area (DMPA) would temporarily affect 47.0 acres of estuarine mud bottom and estuarine water column at the marine facility and 1,100 acres of nearshore marine non-vegetated bottom and marine water column at the DMPA.¹ FERC concludes that sedimentation and turbidity impacts on aquatic resources from dredging would be localized, temporary to short-term, and not significant. I disagree and would refer to 40 Code of Federal Regulations (CFR) 220-229.

Under the MPRSA, EPA is responsible for establishing criteria for reviewing and evaluating permit applications. EPA is responsible for issuing ocean dumping permits for materials other than dredged material. In the case of dredged material, the U.S. Army Corps of Engineers (USACE) is responsible for issuing ocean dumping permits, using EPA's environmental criteria. Permits for ocean dumping of dredged material are subject to EPA review and written concurrence. EPA is also responsible for designating and managing ocean disposal sites for all types of materials.

EPA and USACE together develop site management and monitoring PLANS (SMMPs) for each designated ocean dredged material disposal site. EPA's Ocean Dumping Management Program, often in coordination with USACE, conducts oceanographic surveys at these ocean disposal sites to evaluate environmental conditions at the site and to determine what management actions may be needed. There were no oceanographic surveys provided in this DEIS at this ocean disposal site to evaluate environmental conditions at the site and to determine what management actions may be needed. It is required that the public be provided with this information so they may comment on the site management and monitoring plans prior to agency approvals.

JA430

IND13-1

Discussion of Commonwealth's newly proposed BUDM site in place of the previously proposed DMPA is provided in sections 2.5.1.1. and 4.4.2.2.

IND13-1

INDIVIDUALS

IND13- JOHN ALLAIRE

Document Accession #: 20230523-5041

Filed Date: 05/23/2022

IND13-1

Discussion of Commonwealth's newly proposed BUDM site in place of the previously proposed DMPA is provided in sections 2.5, 1.1, and 4.4.2.

EPA's ocean dumping regulations are published at 40 Code of Federal Regulations (CFR) 220-2229, and include the criteria and procedures for ocean dumping permits and for the designation and management of ocean disposal sites under the MPRSA. In addition, USAE has published regulations under various provisions of 33 CFR 320, 322, 324, 325, 329, 331, and 335-337.

Nowhere in this DEIS is there documentation of the EPA's PLAN review of this proposed permit for ocean dumping of dredged material and no EPA written concurrence is provided for public review or comment. This information is required as is detailed in 40 code of Federal Regulations (CFR) 220-229, Title 33, Section 1412 (3), Dredged Material Disposal Sites. In the case of dredged material disposal sites, the EPA Administrator, in conjunction with the Secretary of ACOE, shall develop a site management PLAN for each site designated pursuant to this section. In developing such PLANS, the Administrator and the Secretary shall provide opportunity for public comment.

Such **PLANS** shall include, but not be limited to— (A) a baseline assessment of conditions at the site; (B) a program for monitoring the site; (C) special management conditions or practices to be implemented at each site that are necessary for protection of the environment; (D) consideration of the quantity of the material to be disposed of at the site, and the presence, nature, and bioavailability of the contaminants in the material; (E) consideration of the anticipated use of the sites over the long term, including the anticipated closure date for the site, if applicable, and any need for management of the site after the closure of the site; and (F) a schedule for review and revision of the plan (which shall not be reviewed and revised less frequently than 10 years after adoption of the plan and every 10 years thereafter).

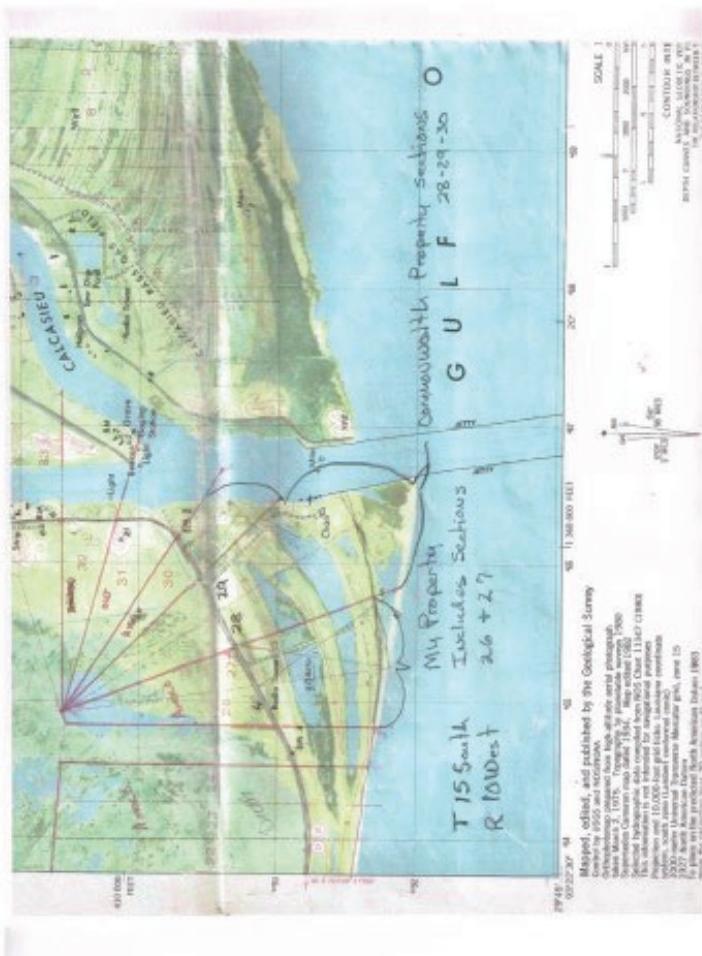
Section 1413 goes on to state that the Dumping permit program for dredged material (a) Issuance by Secretary of the Army Subject to the provisions of subsections (b), (c), and (d) of this section, the Secretary may issue permits, after notice and opportunity for public hearings, for the transportation of dredged material for the purpose of dumping it into ocean waters, where the Secretary determines that the dumping will not unreasonably degrade or endanger human health,

Nowhere in this DEIS is there documentation of the EPA's or the ACOE's PLAN or review of this proposed permit for ocean dumping of dredged material and no EPA written concurrence is provided for public review or comment as is required by is required in 40 code of Federal Regulations (CFR) 220-229 Title 33. Without this required information, neither the sister agencies, interested groups or the public can properly evaluate nor comment on the severity of the adverse effects of the CWLNG disposal Plan. Based on lack of statutorily required information, public notice and opportunity for public hearings in this DEIS I respectfully request the No action alternative be selected for this proposed project.

John Allaire BS/MS Physical Sciences

JA44C

Document Accession #: 20220523-5039 Filed Date: 05/23/2022



JA441

The summary text in section 4.13.2.9 states NSA 2 is approximately 0.4 mile to the west of the proposed Terminal. As noted, this is an approximation. NSA 2 is approximately 0.35 mile west of the proposed stormwater protection wall on the west side of the Terminal. Section 4.11.2 provides more specific distances to NSA 2.

**Comments on Docket CP19-502-000 to FERC in response to Draft EIS Report
(DEIS) Dated March 31, 2022. Comments on Noise Concerns at NSA 2**

Contesting Permit Application Due to Noise Impacts at NSA2.

FERC states on page 4-422 of the DEIS the following: "The nearest NSA to the proposed Terminal, is an RV site used as a year-round residence by the landowner (NSA 2), is approximately 0.4 mile to the west." "Terminal construction is estimated to last 36 to 38 months and would involve disturbance of the entire site and surrounding area." To be accurate the recently re-designated NSA 2 is located less than 1900' from the CWLNG liquefaction Plant, less than 1800' from their main flare system and only 750' from their facility boundary where construction activities would occur.

Federal Regulatory Statute 18 CFR § 157.206(b)(5)(i)(5) states the following

- (i) The noise attributable to any new compressor station, compression added to an existing station, or any modification, upgrade or update of an existing station, must not exceed a day-night level (Ldn) of 55 dBA at any pre-existing noise-sensitive area (such as schools, hospitals, or residences).
- (ii) A compressor facility installed under this section must be designed to meet the following noise emissions criteria. For each new compressor station facility, and for each addition or modification to an existing compression station, the blanket certificate holder must file a noise survey with the Secretary within 60 days of placing the facility in service.

The DEIS states the following: "Operation of the Terminal site would produce noise on a continuous basis. Many of the dominant noise sources (compressor piping and air coolers) would be at elevations of more than 20 feet above grade and, as such, may have a greater influence on NSAs than if ground based."

FERC states that "Excavation and dredging would be required to construct the marine facility and create a berthing area for LNG carriers. Commonwealth would excavate the upland area associated with the marine facility using a land-based excavator. Commonwealth would dredge the open water associated with the marine facility using a barge-mounted cutterhead suction dredge. Dredging would begin within the first nine months of construction and last for 17 months. Commonwealth would also dredge the marine facility footprint every two years during operation, which would require approximately 7 days to complete. Dredging would be conducted on a continuous, 24-hour schedule and in accordance with COE and USCG regulations and FWS and NOAA guidelines to minimize potential impacts on protected species.

Primary noise sources from dredging activities would include diesel engines with associated pumps, as well as a tugboat used to position the dredge for in-water activities and construction equipment and dump trucks for transportation of soils and other materials on land. Table 4.11.2-5 provides the modeled noise impacts for the dredging activities at NSAs 1 and 2. Given the broad extent along the Terminal shoreline that dredging would occur, Commonwealth modeled the

JA442

IND14-2

The recommendations in the final EIS are those of the FERC environmental staff. If the Commission authorizes the Commonwealth LNG Project, FERC staff recommends that the measures listed in section 5.2 be included as specific conditions in the Commission's Order.

The modeling results indicate that the total noise impacts (L_{eq}) during peak construction activities (table 4.11.2-3), and the maximum noise impacts (L_{max}) during peak pile driving (table 4.11.2-4), would exceed expected ambient sound levels at NSAs 1 and 2 by more than 10 dBA (i.e., the increase in noise would be perceived as twice as loud as ambient conditions). The total construction noise impacts appear to be driven by L_{eq} values of the civil works activities (i.e., earth moving equipment). However, the modeled results are considered as worst-case scenarios; these increases over ambient noise would be short term and would occur primarily during daytime hours. The only construction activities to occur during nighttime hours would be dredging operations (table 4.11.2-5). Dredging would increase noise relative to ambient levels at NSA 1 by approximately 5 dBA, which would also exceed the 55 dBA threshold. Therefore, we **recommend** that:

- Prior to the end of the draft EIS comment period, Commonwealth **should** file with the Secretary a dredging noise mitigation plan that includes the measures it would implement to reduce the projected nighttime (10 pm to 7 am) noise levels to at or below 55 dBA L_{dn} at NSA 1, and how it would monitor the noise levels during dredging activities. Be aware that a calibrated and certified continuous noise monitoring system with a data recorder will be installed at NSA2 upon beginning of any dredging or construction activities if this proposed project is permitted. If any civil construction or

IND14-2

Document Accession #: 20220523-5120 Filed Date: 05/23/2022

dredging activities exceed the 55dBA L_{dn} at NSA 2, I would then request that the CWLNG be ordered, not recommended, to implement a construction and dredging mitigation plan prior to resuming aforementioned activities similar to the recommendation indicated for NSA1 in this document.

IND14-2

JA443

INDIVIDUALS

IND14- JOHN ALLAIRE

Document Accession #: 20220523-5122

Filed Date: 05/23/2022

See section 4.11.2.4, in which we provide noise conditions related to operational noise levels and recommend approaches for Commonwealth to comply with the requirement of operating the Terminal at noise levels below an L_{dn} of 55 dBA.

IND14-3

Be aware that a calibrated and certified continuous noise monitoring system with a data recorder will be installed at NSA2 upon beginning of operations of this facility. If operation of this facility noise levels exceed the 55dBA Ldn at NSA 2. I would then request that the CWLNG shutdown until a noise mitigation system be installed and tested prior to resuming operation of the facility.

Flares

As noted in section 2.1.1.4 of the DEIS FERC states the following: "the Terminal would include two flare systems, one associated with the liquefaction facilities and one associated with the marine facility, for venting excess natural gas, if necessary, during maintenance, startup/shutdown, and upset activities. Outside of emergency situations, Commonwealth estimates flaring would be required for approximately 5 days during startup of the Terminal and then for no more than 12 hours during the first year of operation and 6 hours per year in subsequent years." Commonwealth expects the durations of different emergency events to last approximately 1 hour per event at likely frequencies of once every 3, 5, or 25 years depending on the emergency type. Commonwealth expects shutting down the Terminal due to a hurricane would require 6 hours of flaring (i.e., one hour per train), which would represent the largest flaring event. The noise associated with the flare operation as detailed above will clearly exceed the requirements detailed in [Statute 18 CFR § 157.206\(b\)\(5\)\(i\)\(5\)](#) at the propose project location.

Venture Global Calcasieu Pass Facility flared almost continuously from their commissioning date in January through the end of April. In a period from January 27, 2022 until April 27, 2022 Venture Global flared night and day thought out the prime neo-tropical bird migration period. There were 5 only days during this 90 day period when they were not flaring. See attached photographs and I will provide additional time and date stamped photos upon request for the aforementioned months and the month of May 2022 if requested. They continue to flare as I prepare this document. Not only can I see both of Global Venture's flares with the current northeast wind I can hear their flares operating from my patio. See attached photo from 5-22-22. CWLNG states that they will be flaring only 12 days per year in the DEIS. Please define in the EIS what measures will be taken if the proposed project is approved what is to prevent similar flaring events from occurring at the CWLNG site.

Start-up and normal operations-related flaring activity would not result in noise levels in exceedance of the 55 dBA threshold at either NSA. Emergency flaring activities could result in maximum (L_{max}) and day-night (L_{dn}) noise levels upwards of 70 dBA at both NSA 1 and 2. However, these events would be, by definition, emergency events and would be temporary (approximately 1 hour in duration) or during times when the NSAs are unlikely to be populated (i.e., during hurricane evacuations). FERC states the following about flare operations:
"Therefore, we conclude noise impacts from flaring would not be significant." The noise associated with the flare operation as detailed above will clearly exceed the requirements detailed in [Statute 18 CFR § 157.206\(b\)\(5\)\(i\)\(5\)](#) at the propose project location.

JAA444

In their Noise Conclusions found page 4-263 of the DEIS FERC draws the following conclusions.

4.11.2.5 Noise Conclusions

Construction activities are projected to last approximately 36 months. Civil works (i.e., earth moving) could result in noise impacts greater than 55 dBA at NSA 2; pile driving maximum noise levels (L_{max}) during the peak construction period would result in noise impacts greater than 55 dBA at NSAs 1 and 2;

With implementation of an effective noise mitigation plan for dredging, the increases in noise levels during construction would be short-term (**how is 36 months considered short term**) and would occur during daytime hours (7 a.m. to 10 p.m.) (The January sunset in Cameron Louisiana occurs at about 6pm). Based on the analyses conducted and our recommendations, we conclude that operation of the Terminal would not result in significant noise impacts on the NSAs.

The facts as presented in the DEIS detail that the operational noise levels at NSA2 are only 4 L_{dn} below required noise requirements. Even FERC questions these numbers and **recommends**, (not requires) that a statutorily required noise survey be conducted. The construction and flare noise levels as presented in the DEIS exceed regulatory requirements. One can only conclude that the noise levels at NSA2 will not meet the regulatory requirements. I request that the No Action Alternative for this proposed project be selected.

John Allaire

621 Gulf Beach HWY Holly Beach, Louisiana 70631

Section 4.11.2 has been revised to reflect that the anticipated duration for dredging is 5 months. Impacts related to construction activities are considered temporary. Section 4.11.2 also contains our recommendation that Commonwealth monitor construction noise levels between 7:00 p.m. and 7:00 a.m. and restrict noise attributable to construction activities to no more than 55 dBA L_{dn} (48.6 dBA) at NSAs 1 and 2.

Comment noted. Commission staff has included the recommendations in section 4.11.2.4 to ensure the noise levels are met. As noted in our response to comment IND14-2, the recommendations in the final EIS are those of the FERC environmental staff. If the Commission authorizes the Commonwealth LNG Project, FERC staff recommends that the measures listed in section 5.2 be included as specific conditions in the Commission's Order.

INDIVIDUALS
IND17- JOHN ALLAIRE

Document Accession #: 20220524-5020

Filed Date: 05/24/2022

Comments on Docket CP19-502-000 for Commonwealth LNG Project
Response to Commonwealth's "Response to CWLNG Claims of May 23,

I would like to address several inaccuracies, omissions and missstatements in CWLNG's May 23, 2022 submittal to FERC. There are several inaccuracies and omissions in their most recent submission to FERC. I will restate that the site pavilion has a 50' by 30', 6" thick concrete slab that is reinforced with nylon fibers and pretensioned stainless steel aircraft cable. This pavilion was one of the only structures in lower Cameron Parish which was not damaged or destroyed by Hurricanes Laura and Delta. Commonwealth stated that "Mr. Allaire parks his camper trailer on the occasions when he intermittently visits Louisiana". I purchased this camper in December of 2016 and the trailer has been parked continuously at this location since that date. The two occasions when this trailer was not at this location was during the evacuations related to hurricanes Laura and Delta in 2020.

Commonwealth goes on to state that "in this regard Commonwealth personnel have rarely seen Mr. Allaire at this location." I'm not sure if this a misstatement or mistruth. I was unaware that Commonwealth was observing and documenting my presence in Cameron Parish. Upon request I can provide dated, 2022 credit card receipts that will document my presence in Cameron Parish. Additionally, I can provide phone records and statements from Cameron Parish regarding the time period in question.

I am currently in discussions with a local builder to construct a permanent residence at this location. Due to his current project load he is not available to begin the project in the first or second quarter of 2022. I am planning to submit plans to the Parish for my new permitted

On another note CWING informed FERC that they moved their pipeline right-of-way, because a landowner requested them to move it. This increased the acreage of wetlands affected by the pipeline right-of-way by .1 acre. Ask CWING who the landowner was. What really happened is when I informed them that I would not sign their option agreement as presented until my land attorney reviewed it. I then asked to see the Cameron Port Harbor and Terminal Authority's (CPHTA) pipeline agreement with CWING. Louisiana law requires that the CPHTA must obtain an independent appraisal and make that information available for public review and comment.

The CPHTA did not show up at her office at the time published in the public notice and the independent appraisal was not available for review. She said she would send me a copy back in 2021 and I am still waiting. I asked who performed and paid for the appraisal. She stated it was CWLNG's contractor TRC and that CWLNG paid for the appraisal. I have copies of the public notice and emails to confirm my comments. They are available upon request. The same outfit that did the pipeline appraisal for CPHTA did my property appraisal for CWLNG.

Comment noted. See section 4.8.2.

IND17-1

Comment noted.

INDI 17-2

IND17-1

IND172

JA446

INDIVIDUALS

ND17- JOHN ALLAIRE

Document Accession #: 20220524-50200

Filed Date : 05/24/2022

IND17-3 Comment noted.

USCA Case #23-1071

Document #2023142

Filed: 10/20/2023

Page 452 of 516

In February of 2021 Mr. Karl Jansson VP for Commonwealth requested that I participate a conference call with himself and Mr. Paul Varelo with Commonwealth to discuss the possibility of purchasing my property. In their response to FERC they stated that "Mr. Allaire's property has been assessed to have a market value of \$385,000." I'm not sure who performed this assessment without visiting the property. My 311 acre tract of land includes all of Sections 26 and 27 in Township 15S range 10W. The property has approximately 3200' of frontage on the Gulf of Mexico and 2300' of frontage on the north and south sides of State HWY 27. Improvements on the property include the previously mentioned pavilion, a permitted septic system, drinking water service and Jeff Davis electrical service, a permitted 290' deep 4' water well which is completed in the Chicot aquifer, 3500' of heavy industrial grade road which is double boarded with 36" of limestone and geotextile fabric and a 20,000 sq. ft. 18" thick heavy industrial raised pad.

Recent property improvements after the hurricanes include complete replacement of all site electrical components and addition of 92 tons of limestone to the site roads to repair hurricane damage. Additionally, in April 2021 we completed a \$10,085.92 habitat improvement project at the site which was funded by Ducks Unlimited and USFW Partners for Fish and Wildlife Program. Cost estimates obtained this month for the replacement of the site roads and site pad are \$700,000 for the road and \$100,000 for the pad. The pavilion cost when built in 2018 was \$27,000. The water well cost was \$13,000 when installed in 2011. The utility infrastructure cost of replacement including permit fees would be approximately \$15,000.

Commonwealth misstated in their response to FERC that they offered me \$450,000 for my property. That is not accurate. They offered me \$40,000 to sign an option agreement to potentially purchase the property. Upon execution of this agreement they would then have the option to purchase the property at a price of \$400,000 at a future date. I would retain the \$40,000 option payment in the event that they decided not to purchase the land.

The Commonwealth offer was completely inadequate as the following local real estate listings detail:

MLS# 194304, 1.56 acres of land with frontage on State HWY 27 in Holly Beach. No property improvements, listed for \$1,000,000

MLS# SWL21003878, .46 acres of land in Pelican Beach Subdivision. No Gulf frontage or property improvements, listed for \$67,000

MLS# SLW21001345, .12 acres of land in Holly Beach. No gulf frontage but includes basic utilities, listed for \$69,000

MLS# 193271, 15 acres of Agricultural land in Johnson Bayou. North of State HWY 27, listed for \$137,500 for a cost of \$9,166 per acre

MLS# SWL21001142, .23 acres on the beach front. Vacant land listed for \$100,000

Document Accession #: 20220524-50200

Filed Date : 05/24/2022

IND17-3

Thank you giving me an opportunity to correct and clarify some of the misleading and inaccurate statements Commonwealth has submitted to FERC with regard to myself and my secondary residence. I am concerned about consistent inaccuracies they have submitted to FERC regarding the purchase my property, how they assessed it and contesting my 2020 presence at my property. In my mind it still raises serious questions about the integrity of their filings and information provided elsewhere across the docket to FERC.
John Allaire

JA447

Document Accession #: 20220524-5201 Filed Date: 05/24/2022

**Comments on Docket CP19-502-000 to FERC in response to Draft EIS Report
(DEIS) Dated March 31, 2022. Comments with regard to tidally influenced
areas affected by this project.**

I am a local property owner whose residence is located directly west of the proposed project site. All of my 311 acres of coastal wetlands drain through main footprint of the proposed CWLNG site. I am a degreed professional with over thirty of experience in the environmental field. I have worked as an Environmental Engineer, Environmental Coordinator and an Environmental Manager for one of the world's largest Oil and Gas companies in the world. Over twenty years of career were spent working in Louisiana. My credentials are available upon request. Much of my property is tidally influenced and will be directly affected by the proposed project. I have been living at this site since 1998 and have observed the tidal action in this area for 24 years. The current mapping of area drainage plan and tidally influenced areas as presented in the DEIS are incomplete and inaccurate.

With regard to delineation of tidally influenced areas affected by this project FERC in a March 31, 2022 letter to NOAA NMFS the USACE stated the following: "As of March 31, 2022, the U.S. Army Corps of Engineers had not completed its official accounting of the acreage of wetlands that it considers to be tidally influenced at the LNG terminal site; therefore, the final acreage total of FEH that would be affected by construction of the Project could vary from that presented here." The DEIS presents to the sister agencies or the public "no official accounting of the acreage of wetlands that it considers to be tidally influenced at the LNG terminal site."

I contend that the amount of tidally influenced wetlands as currently presented in the DEIS is inaccurate and greatly underreported. In this DEIS the agencies have failed to disclose the extent of the tidally affected wetlands or the how the adjacent area drainage will not be disrupted. I conducted a limited study of the of the tidal elevations at the tidal drains that connect the water body identified on CWLNG wetland delineation maps as CO2 with the property south of State Hwy 27. See the map below. The attached Power Point presentation shows the locations of the tidal drains located along Hwy 27. These tidal drains are located under the road and provide tidal flow into the marsh south of Hwy 27. The SW tidal drain is located on Section 27 which adjoins section 28 of the proposed CWLNG project site. GPS coordinate of the SW and NE tidal drains are provided along with a photo of the SW tidal drain.

Slides 4 -7 in the PowerPoint presentation are date and time stamped and show the tidal levels at that moment in time. This series of photos detail the tidal elevation variations south of Hwy 27 over the last 2 weeks. Additional photos and tidal elevations were collected and can be provided upon request. These tidal readings vary as much as 10.16 inches over period of this study. CWLNG Figure 9, which is included in the Power Point presentation, details the Mean High Water elevations = to +8' NAVD elevations that are flooded by high tide events. These events occur regularly at this site.

In addition the high tides this weekend over topped the gulf shore line dunes and flooded tidal water into water body SLO1 which is identified on the aforementioned wetland delineation map. Photos and videos can be provided upon request.

How can the public be expected to respond intelligently to the project's environmental affects if tidal information is not provide in this DEIS. I respectfully request at a minimum that FERC formally withdraw this incomplete DEIS until they can provide their sister agencies and the public with complete and accurate information related to this project.

Document Accession #: 20220524-5201 Filed Date: 05/24/2022

If FERC is unable to provide complete and accurate information with regard to the aforementioned issue I would respectfully request that FERC select the NO Action alternative for this project at this environmentally productive and sensitive area. Thank for your attention to this matter.

JAA448

IND18 is a duplicate of IND16

INDIVIDUALS

IND19- CYBELE KNOWLES

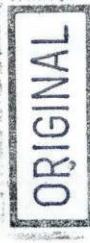
Document Accession #: 20220523-0006

Filed Date: 05/23/2022



CENTER for BIOLOGICAL DIVERSITY

Because life is good.



May 18, 2022

Secretary Kimberly D. Bose
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, D.C. 20426

Dear Commissioners,

Enclosed please find 1,793 comments from Center for Biological Diversity supporters urging you to deny Commonwealth LNG's application for a new terminal and pipeline in Cameron Parish, Louisiana (CP19-502-000, CP19-502-001).

The project will destroy more than 30 acres of wetlands, which provide critically important habitat for federally protected eastern black rails. Noise and human activity associated with the construction and operation of the facility will likely further displace and disrupt black rails near the project site. As many as 30 birds may be killed or injured by the project. Meanwhile, eastern black rail populations in Louisiana and the southeast region are already facing significant threats. The U.S. Fish and Wildlife Service has determined that there may be only 10 or fewer breeding pairs left in the entire state and that the Southwest Coastal Plain population has "low resiliency" due to low populations threatened by sea-level rise and habitat loss. The species is likely to be extirpated in the United States by 2068 without implementation of better land-management practices. We can't afford to lose any more eastern black rails, especially when cleaner, more efficient, and less harmful alternatives clearly exist for this project.

In addition to destroying habitat for black rails and other wildlife, the pipeline will add to the climate emergency. Although natural gas is sometimes touted as a climate solution, its chief component — methane — is an especially potent climate pollutant that heats the atmosphere 87 times more than the same amount of carbon dioxide over a 20-year period.

Thank you for your attention to the enclosed letters.

For the wild,

Cybele Knowles
Deputy Digital Director
cknowles@biologicaldiversity.org
(520) 623-5252 x 324

Enclosure: 1,793 letters

Alaska • Arizona • California • Florida • Minnesota • Nevada • New Mexico • New York • Oregon • Vermont • Washington • DC
P.O. Box 710 • Tucson, AZ 85702-0710 tel: (520) 623-5252 fax: (520) 623-9797 www.BiologicalDiversity.org

JA449

Project impacts on wetlands and Commonwealth's proposed mitigation are discussed in section 4.4.2. Threatened and endangered species, including the eastern black rail, are addressed in section 4.7.

IND19-1 Project impacts on wetlands and Commonwealth's proposed mitigation are discussed in section 4.4.2. Threatened and endangered species, including the eastern black rail, are addressed in section 4.7.

IND19-2 Impacts on threatened and endangered species, including the eastern black rail, are addressed in section 4.7.

IND19-3 See response to comment IND19-2.

IND19-4 See response to comment IND19-2.

IND19-5 Climate impacts of the Project discussed in section 4.13.2.11.

FERC received 1,793 copies of IND19 and IND20, which contain the same comments in different formats.

Project impacts on wetlands and Commonwealth's proposed mitigation are discussed in section 4.4.2. Threatened and endangered species, including the eastern black rail, are addressed in section 4.7.

IND20-1

Project impacts on wetlands and Commonwealth's proposed mitigation are discussed in section 4.4.2. Threatened and endangered species, including the eastern black rail, are addressed in section 4.7.

Secretary Kimberly D. Bose
Federal Energy Regulatory Commission
888 First Street, NE, Room 1A
Washington, DC 20426

2022 MAY 24 A II: 3 |

Dear Commissioners,

I urge the Federal Energy Regulatory Commission to deny Commonwealth's application for a new terminal and pipeline in Cameron Parish, Louisiana (CP19-502-000, CP19-502-001). The project will destroy more than 30 acres of wetlands, which provide critically important habitat for federally protected eastern black rails. Noise and human activity associated with the construction and operation of the facility will likely further displace and disrupt black rails near the project site. As many as 30 birds may be killed or injured by the project. Meanwhile, eastern black rail populations in Louisiana and the southeast region are already facing significant threats. The U.S. Fish and Wildlife Service has determined that there may be only 10 or fewer breeding pairs left in the entire state and that the Southwest Coastal Plain population has "low resiliency" due to low populations threatened by sea-level rise and habitat loss. The species is likely to be extirpated in the United States by 2068 without implementation of better land-management practices. On another point, the location along the Gulf is especially prone recently to severe hurricane conditions. It is reasonable to predict damage to the pipeline with massive releases of the methane contamination, that will contribute significantly to the carbon footprint in that area and beyond as it is distributed by wind from any such tropical storm/hurricane conditions. We can't afford to lose any more eastern black rails, especially when cleaner, more efficient, and less harmful alternatives clearly exist for this project. In addition to destroying habitat for black rails and other wildlife, the pipeline will add to the climate emergency. Although natural gas is sometimes touted as a climate solution, its chief component — methane — is an especially potent climate pollutant that heats the atmosphere 37 times more than the same amount of carbon dioxide over a 20-year period? FERC must deny Commonwealth's application.

Sincerely,

Gail S. Tucker
Miami, FL 33137

IND20-2
Impacts of natural hazards on the Project are addressed in sections 4.1.5 and 4.12.1.5. Climate impacts are addressed in section 4.13.2.11.

IND20-1

Impacts of natural hazards on the Project are addressed in sections 4.1.5 and 4.12.1.5. Climate impacts are addressed in section 4.13.2.11.

IND20-2
Impacts of natural hazards on the Project are addressed in sections 4.1.5 and 4.12.1.5. Climate impacts are addressed in section 4.13.2.11.

JA450

INDIVIDUALS

IND21- RAMEET SINGH

| | |
|---|------------------------|
| Document Accession #: 20220527-0021 | Filed Date: 05/27/2022 |
| ORIGINAL | |
| FILED SECRETARY OF THE COMMISSION | |
| MAY 27 A 9:23 | |
| FEDERAL ENERGY REGULATORY COMMISSION | |
| Re: Commonwealth LNG's Draft Environmental Impact Statement <i>CPI-502</i> | |
| <p>Dear Commissioners,</p> <p>I am writing to express my serious concerns regarding Commonwealth LNG's Draft Environmental Impact Statement - we simply cannot let this project be built. The people and fragile wetlands in Southwest Louisiana already suffer extreme impacts of the fossil fuel industry, Commonwealth LNG, and the 10 other export terminals proposed for the region, will result in irreparable harm and lock the world into a climate crisis. The Federal Energy Regulatory Commission must put people over corporate profits, and say no to Commonwealth LNG.</p> <p>Commonwealth LNG will contribute significantly to the region's increasingly polluted air, which is already causing significant public health issues in Southwest Louisiana. There are four LNG terminals planned for the small community of Cameron, and the combined emissions would make the region uninhabitable.</p> <p>In addition, the construction and operation of Commonwealth LNG would result in the destruction of valuable wetlands where federally endangered and threatened species like the Eastern Black Rail and Piping Plover nest. The increased ship traffic will put the Gulf's Rice's Whale, Bottlenose Dolphin, and other federally threatened and endangered species at risk of marine pollution and ship strikes.</p> <p>Commonwealth LNG will also be located in an extremely vulnerable section of shoreline. Hurricanes hit this region with greater frequency and force, a problem that will only get worse as our climate continues to warm. In recent years, the community of Cameron has recorded 12-14 foot storm surges and the shoreline is eroding away at an average of 13 feet per year. This is a dangerous location for a fracked gas export terminal and all of the hazardous waste and gas that will contaminate the region when the facility is compromised.</p> <p>Finally, Southwest Louisiana is already among the most impacted in the country by climate change. Communities like Cameron, once a thriving fishing community of 10,000 people, have seen most of their residents migrate due to climate disasters. The construction of even more fracked gas export terminals will lock the world into irreversible climate disaster, and render Southwestern Louisiana uninhabitable.</p> <p>Commonwealth LNG is using the Russian-Ukraine conflict and Europe's energy needs to justify their project. The U.S. already has enough gas export infrastructure to satisfy Europe's demand for gas. We don't need to export more gas to satisfy global needs. In fact, Commonwealth LNG would not come online for at least three more years and would contribute nothing to Europe's current energy needs.</p> <p>This proposal does not benefit domestic consumers and it damages essential wetlands. Please do not put the profits a big business in front of our planet in our people.</p> <p>We cannot allow the fossil fuel industry to sacrifice our Gulf just to export gas. Our environment and human populations are too high a price to pay.</p> <p>Sincerely, Rameet Singh</p> | |

JA451

INDIVIDUALS

IND22- ELLEN JO RUDOLPH

Document Accession #: 20220527-0008

Filed Date: 05/27/2022

Jo Ellen Rudolph
Petroskey, MI 49770

May 20, 2022

Federal Energy Regulatory Commission
Secretary of the Commission, Kimberly D. Bose
888 First St, NE, Washington, DC 20426
Re: Commonwealth LNG's Draft Environmental Impact Statement

Dear Commissioners,

I am writing to express my serious concerns regarding Commonwealth LNG's Draft Environmental Impact Statement - we simply cannot let this project be built. The people and fragile wetlands in Southwest Louisiana already suffer extreme impacts of the fossil fuel industry. Commonwealth LNG, and the 10 other export terminals proposed for the region, will result in irreparable harm and lock the world into a climate crisis. The Federal Energy Regulatory Commission must put people over corporate profits, and say no to Commonwealth LNG.

Commonwealth LNG will contribute significantly to the region's increasingly polluted air, which is already causing significant public health issues in Southwest Louisiana. There are four LNG terminals planned for the small community of Cameron, and the combined emissions would make the region uninhabitable.

In addition, the construction and operation of Commonwealth LNG would result in the destruction of valuable wetlands where federally endangered and threatened species like the Eastern Black Rail and Piping Plover nest. The increased ship traffic will put the Gulf's Rice's Whale, Bottlenose Dolphin, and other federally threatened and endangered species at risk of marine pollution and ship strikes.

Commonwealth LNG will also be located in an extremely vulnerable section of shoreline. Hurricanes hit this region with greater frequency and force, a problem that will only get worse as our climate continues to warm. In recent years, the community of Cameron has recorded 12-14 foot storm surges and the shoreline is eroding away at an average of 13 feet per year. This is a dangerous location for a fracked gas export terminal and all of the hazardous waste and gas that will contaminate the region when the facility is compromised.

Finally, Southwest Louisiana is already among the most impacted in the country by climate change. Communities like Cameron, once a thriving fishing community of 10,000 people, have seen most of their residents migrate due to climate disasters. The construction of even more fracked gas export terminals will lock the world into irreversible climate disaster, and render Southwestern Louisiana uninhabitable.

Commonwealth LNG is using the Russian-Ukraine conflict and Europe's energy needs to justify their project. The U.S. already has enough gas export infrastructure to satisfy Europe's demand for gas. We don't need to export more gas to satisfy global needs. In fact, Commonwealth LNG would not come online for at least three more years and would contribute nothing to Europe's current energy needs.

THIS AREA ALREADY HAS TOO MUCH POLLUTION AND ENVIRONMENTAL INJUSTICE. THE GULF IS ALSO A VERY DAMAGED AREA FROM THE BP OIL SPILL. OCEAN MAMMAL SPECIES AND COMMERCIAL CRUSTACEAN SUPPLIES HAVE NOT REBOUNDED. OCEANMAMMALS HAVE BEEN FOUND WITH PHYSICAL DEFORMITIES. THE OCEAN BOTTOM STILL HAS OIL SLUDGE WHICH WILL POLLUTE THE AREA FOREVER. THE OCEAN DOES NOT NEED MORE POLLUTING INDUSTRIES ESPECIALLY AN INDUSTRY THAT WILL ONLY SEND POLLUTING AMERICAN LP GAS OVERSEAS.

We cannot allow the fossil fuel industry to sacrifice our Gulf just to export gas. Our environment and human populations are too high a price to pay.

Sincerely, Jo Ellen Rudolph

JA452

IND22-1

The impacts of the Project on Environmental Justice communities are discussed in section 4.9.12.3. The impacts of the Project on Air Quality are discussed in section 4.11.1. The Impacts of the Project on aquatic resources are discussed in section 4.6.2

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COMMISSION

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FEDERAL ENERGY
REGULATORY COMMISSION

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IND22-1

IND23-1

Impacts of the Project on the local economy are addressed throughout section 4.9. Climate impacts of the Project discussed in section 4.13.2.11.

Document Accession #: 20220527-0008 Filed Date: 05/27/2022

Mary Barr
Indianapolis, IN 46219
May 20, 2022

Federal Energy Regulatory Commission
Secretary of the Commission, Kimberly D. Bosse
888 First St, NE, Washington, DC 20426
Re: Commonwealth LNG's Draft Environmental Impact Statement

Dear Commissioners,

I am writing to express my serious concerns regarding Commonwealth LNG's Draft Environmental Impact Statement - we simply cannot let this project be built. The people and fragile wetlands in Southwest Louisiana already suffer extreme impacts of the fossil fuel industry. Commonwealth LNG, and the 10 other export terminals proposed for the region, will result in irreparable harm and lock the world into a climate crisis. The Federal Energy Regulatory Commission must put people over corporate profits, and say no to Commonwealth LNG.

Commonwealth LNG will contribute significantly to the region's increasingly polluted air, which is already causing significant public health issues in Southwest Louisiana. There are four LNG terminals planned for the small community of Cameron, and the combined emissions would make the region uninhabitable.

In addition, the construction and operation of Commonwealth LNG would result in the destruction of valuable wetlands where federally endangered and threatened species like the Eastern Black Rail and Piping Plover nest. The increased ship traffic will put the Gulf's Rice's Whale, Bottlenose Dolphin, and other federally threatened and endangered species at risk of marine pollution and ship strikes.

Commonwealth LNG will also be located in an extremely vulnerable section of shoreline. Hurricanes hit this region with greater frequency and force, a problem that will only get worse as our climate continues to warm. In recent years, the community of Cameron has recorded 12-14 foot storm surges and the shoreline is eroding away at an average of 13 feet per year. This is a dangerous location for a fracked gas export terminal and all of the hazardous waste and gas that will contaminate the region when the facility is compromised.

Finally, Southwest Louisiana is already among the most impacted in the country by climate change. Communities like Cameron, once a thriving fishing community of 10,000 people, have seen most of their residents migrate due to climate disasters, and render Southwestern Louisiana uninhabitable.

Commonwealth LNG is using the Russian-Ukraine conflict and Europe's energy needs to justify their project. The U.S. already has enough gas export infrastructure to satisfy Europe's demand for gas. We don't need to export more gas to satisfy global needs. In fact, Commonwealth LNG would not come online for at least three more years and would contribute nothing to Europe's current energy needs.

The residents living in the Gulf area have lost businesses over the past years, even decades, due to big oil and gas companies taking over and resulting in loss of fishing rights, loss of damage done to people's livelihoods. Families not only are losing their jobs but the health and welfare of their children. Do not give into big business of Commonwealth LNG intending to add to more ruin of lives and climate issues in it endeavors to get its foothold in Cameron. This big company has a history of impacting climate change negatively.

We cannot allow the fossil fuel industry to sacrifice our Gulf just to export gas. Our environment and human populations are too high a price to pay.

Sincerely,
Mary Barr

IND23-1

JA453

INDIVIDUALS

IND24- JOHN ALLAIRE

IND24-1

Impacts of the Project on commercial fisheries are addressed in section 4.9.7. Impacts and mitigation related to coastal wetlands are addressed in section 4.4 and 4.6.2.

Op19-502

Rosenberg, TX 77471

May 20, 2022

Federal Energy Regulatory Commission
Secretary of the Commission, Kimberly D. Bose
888 First St, NE, Washington, DC 20426
Re: Commonwealth LNG's Draft Environmental Impact Statement

Dear Commissioners,

I am writing to express my serious concerns regarding Commonwealth LNG's Draft Environmental Impact Statement - we simply cannot let this project be built. The people and fragile wetlands in Southwest Louisiana already suffer extreme impacts of the fossil fuel industry. Commonwealth LNG, and the 10 other export terminals proposed for the region, will result in irreparable harm and lock the world into a climate crisis. The Federal Energy Regulatory Commission must put people over corporate profits, and say no to Commonwealth LNG.

Commonwealth LNG will contribute significantly to the region's increasingly polluted air, which is already causing significant public health issues in Southwest Louisiana. There are four LNG terminals planned for the small community of Cameron, and the combined emissions would make the region uninhabitable.

In addition, the construction and operation of Commonwealth LNG would result in the destruction of valuable wetlands where federally endangered and threatened species like the Eastern Black Rail and Piping Plover nest. The increased ship traffic will put the Gulf's Rice's Whale, Bottlenose Dolphin, and other federally threatened and endangered species at risk of marine pollution and ship strikes.

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Finally, Southwest Louisiana is already among the most impacted in the country by climate change. Communities like Cameron, once a thriving fishing community of 10,000 people, have seen most of their residents migrate due to climate disasters. The construction of even more fractured gas export terminals will lock the world into irreversible climate disaster, and render Southwestern Louisiana uninhabitable.

Commonwealth LNG is using the Russian-Ukraine conflict and Europe's energy needs to justify their project. The U.S. already has enough gas export infrastructure to satisfy Europe's demand for gas. We don't need to export more gas to satisfy global needs. In fact, Commonwealth LNG would not come online for at least three more years and would contribute nothing to Europe's current energy needs.

There is no need for another LNG export facility in Cameron Parish.

I am a resident of Hackberry, La. and have already seen the effects of the Cameron and Global Venture facilities on our fishing, shrimping; crabbing industries as well as the destruction of our coastal wetlands which support migratory birds and waterfowl. Please deny the Commonwealth LNG permit. It will only destroy more!!

Hank Gamble

We cannot allow the fossil fuel industry to sacrifice our Gulf just to export gas. Our environment and human populations are too high a price to pay.

Sincerely,
John Allaire

Document Accession #: 20220527-0008

Filed Date: 05/27/2022

J A 454

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

IN THE MATTER OF)
)
Commonwealth LNG, LLC) Docket No. CP19-502-000
)

**REQUEST FOR REHEARING OF SIERRA CLUB, NATURAL RESOURCES
DEFENSE COUNCIL, CENTER FOR BIOLOGICAL DIVERSITY, HEALTHY
GULF, LOUISIANA BUCKET BRIGADE, NATIONAL AUDUBON SOCIETY,
AND TURTLE ISLAND RESTORATION NETWORK**

Sierra Club, Natural Resources Defense Council, Center for Biological Diversity, Healthy Gulf, the Louisiana Bucket Brigade, the National Audubon Society, and Turtle Island Restoration Network request rehearing of the Federal Energy Regulatory Commission's (FERC or Commission) November 17, 2022, order (Authorization Order) approving the Commonwealth LNG project (Commonwealth LNG or Project).¹ This request is timely, having been filed within 30 days of the Commission's Authorization Order.²

The Authorization Order is deeply flawed and should be rescinded. While this Request for Rehearing outlines in detail the multitude of reasons why FERC must

¹ *Commonwealth LNG, LLC*, 181 FERC ¶ 61,143 (Nov. 17, 2022) (hereinafter Authorization Order). This Request for Rehearing also uses Commonwealth LNG to refer to the Applicant, Commonwealth LNG, LLC.

² The Commission issued the Certificate Order on Thursday, November 17, 2022. Under the Commission's regulations, a request for rehearing is due 30 days after issuance of the Certificate Order. 18 C.F.R. § 385.713. Thirty days from November 17, 2022 is Saturday, December 17, 2022. Under the Commission's rules, when a deadline falls on a Saturday, the deadline is extended to the following business day, in this case, Monday, December 19, 2022. 18 C.F.R. § 385.2007.

reverse the Authorization Order, one point must be stated at the outset: for FERC to uncritically greenlight yet another liquefied natural gas (LNG) export facility in southwest Louisiana is an affront to the rule of law and to fundamental fairness. Cameron Parish, Louisiana deserves better than a FERC that repeatedly applies an “ostrich-like” approach to its gas reviews and falsely claims—again—a powerlessness to evaluate the Project’s environmental effects and whether the Project is consistent with the public interest.³ For example, if built, Commonwealth LNG would increase nitrogen oxide levels beyond current levels—levels that already exceed U.S. Environmental Protection Agency (EPA) standards.⁴ And the people exposed to this additional pollution primarily live in already disproportionately burdened environmental justice communities.⁵ FERC claims that because Commonwealth LNG’s incremental contribution to this pollution is small, these increases do not present an environmental justice problem.⁶ But this profoundly misunderstands the principles of environmental justice, which are centrally concerned with the cumulative impacts that environmental justice communities suffer when regulators repeatedly incrementally increase the burdens on these communities.

³ See *Env'tl. Def. Fund v. FERC*, 2 F.4th 953, 975 (D.C. Cir. 2021).

⁴ Authorization Order P 63.

⁵ *Id.*

⁶ *Id.* at P 63, P 71.

Further, this pollution is entirely unjustified. As Chairman Glick's concurrence explicitly admits, FERC simply does not have a framework or reasoning for determining whether an LNG project is consistent with the public interest. Instead, FERC shirks its duty by treating the U.S. Department of Energy's (DOE) approval to export the *commodity* as conclusively establishing that the *infrastructure* provides public benefits, but no one—not FERC, not DOE, nor anyone else—ever evaluates whether those benefits outweigh and justify the harm caused by a particular LNG export terminal. Moreover, the question before FERC is not simply whether to approve or deny the application. FERC has the statutory responsibility for ensuring that LNG export infrastructure is not designed and operated in a needlessly harmful manner. As such, FERC could have approved the Project while still requiring a more efficient design or more stringent controls.

For these and the many others explained below, FERC should grant this Request for Rehearing, and rescind its approval of the Commonwealth LNG Project.

STATEMENT OF ISSUES

Pursuant to 18 C.F.R. § 385.713(c)(1), we offer the following concise statements of alleged errors. These errors are explained in greater detail below.

1. FERC failed to articulate or apply a coherent standard in making the Natural Gas Act determination of whether the Commonwealth project's adverse impacts

outweighed its benefits. *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). Section I.⁷

2. The EIS violates NEPA because it fails to rigorously explore all reasonable alternatives. Section II.
 - a. The EIS improperly dismisses system alternatives, and the possibility of using more efficient liquefaction technology, based on the improper assumption that FERC can reject alternatives that would not provide the full volume of Free Trade Agreement (FTA) exports proposed to DOE. Section II.A.⁸
 - b. The EIS improperly rejects multiple design alternatives without demonstrating that those alternatives would be infeasible and without rigorously exploring their environmental impacts. Section II.B.⁹
 - c. The EIS violates the APA and NEPA because it fails to include a true no action alternative. Section II.C¹⁰

⁷ 15 U.S.C. §717b; *KeySpan LNG, L.P.*, 112 FERC ¶ 61,028.

⁸ *N. Buckhead Civic Ass'n v. Skinner*, 903 F.2d 1533, 1542 (11th Cir. 1990), 5 U.S.C. § 706(2)(A); 15 U.S.C. §717b.

⁹ *Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 43; 5 U.S.C. § 706(2)(A); 15 U.S.C. §717b.

¹⁰ 5 U.S.C. § 706(2)(A); 15 U.S.C. §717b; 40 C.F.R. § 1502.14; *City of Shoreacres v. Waterworth*, 420 F.3d 440, 450 (5th Cir. 2005); *Friends of Yosemite Valley v. Kempthorne*, 520 F.3d 1024, 1026–27 (9th Cir. 2008); *N.C. Wildlife Fed'n v. N.C. Dep't of Transp.*, 677 F.3d 596, 603 (4th Cir. 2012); *Theodore Roosevelt Conservation P'ship v. Salazar*, 744 F. Supp. 2d 151, 160 (D.D.C. 2010). *aff'd*, 661 F.3d 66 (D.C.Cir.2011); *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1085 (9th Cir. 2011); *Friends of Yosemite Valley v. Scarlett*, 439 F. Supp. 2d 1074, 1105 (E.D. Cal. 2006).

3. The EIS fails to take the required hard look at GHGs. Section III.¹¹

a. The EIS failed to evaluate the significance or impact of GHGs. Section

III.A.¹²

b. The EIS's conclusion that indirect emissions relating to gas production

and use could be excluded from the scope of analysis, in reliance on

Sierra Club v. FERC, 827 F.3d 36 (D.C. Cir. 2016) (*Freeport I*), was

arbitrary, because DOE's approval was a connected action. Moreover,

FERC should inform the D.C. Circuit that FERC believes *Freeport I* was

wrongly decided. Section III.B.¹³

¹¹ 5 U.S.C. § 706(2)(A); 15 U.S.C. §717b; *Sierra Club v. FERC*, 827 F.3d 36, 40 (D.C. Cir. 2016) (hereinafter *Freeport I*); 40 C.F.R. § 1502.16(a)(1); *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1216 (9th Cir. 2008); *Ctr. for Biological Diversity*, 538 F.3d at 1216; *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 995 (9th Cir. 2004); 85 Fed. Reg. 78,197.

¹² 5 U.S.C. § 706(2)(A); 15 U.S.C. §717b; *Balt. Gas & Elec. Co. v. N.R.D.C.*, 462 U.S. 87, 97, 103 S.Ct. 2246, 76 L.Ed.2d 437 (1983); *Venture Global Calcasieu Pass, LLC*, 166 FERC ¶ 61,144 (2019); *Jordan Cove Energy Project L.P.*, 171 FERC ¶ 61,136, PP 245, 253 (2020); (Glick, Comm'r, dissenting at P 7); *Utahns for Better Transp. v. U.S. Dep't of Transp.*, 305 F.3d 1152, 1162 (10th Cir. 2002); *N. Nat. Gas Co.*, 174 FERC ¶ 61,189, at P 32 (2021).

¹³ 5 U.S.C. § 706(2)(A); 15 U.S.C. §717b; *Sierra Club v. FERC*, 827 F.3d 36, 40 (D.C. Cir. 2016) (hereinafter *Freeport I*); 40 C.F.R. § 1502.16(a)(1); *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1216 (9th Cir. 2008); *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 995 (9th Cir. 2004); 85 Fed. Reg. 78,197; 5 U.S.C. § 706(2)(A); 15 U.S.C. §717b; 40 C.F.R. § 1501.9; *Jones v. D.C. Redevelopment Land Agency*, 499 F.2d 502, 510 (D.C. Cir. 1974); *Sierra Club v. U.S. Army Corps of Engineers*, 803 F.3d 31, 49-51 (D.C. Cir. 2015); *Del. Riverkeeper*, 753 F.3d at 1314; *City of Boston Delegation v. FERC*, 897 F.3d 241, 251-52 (D.C. Cir. 2018) ("*City of Boston*"); 42 U.S.C. § 7173; *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1213 (9th Cir. 2008).

4. FERC's analysis of air pollution impacts, and the impacts of air pollution on environmental justice communities in particular, was arbitrary. Section IV.¹⁴
5. The EIS fails to take the required hard look at impacts to sensitive species and FERC's order and EIS violate the Endangered Species Act (ESA). Section V.¹⁵
 - a. The EIS fails to take the required hard look at impacts to bottlenose dolphins. Section V.A.¹⁶
 - b. The EIS fails to take the required hard look at impacts to the eastern black rail (EBR) and the Authorization Order violate NEPA, the Endangered Species Act, and the APA. Section V.B.¹⁷

¹⁴ 5 U.S.C. § 706(2)(A); 15 U.S.C. § 717b; Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 16, 1994); *see also* 18 C.F.R. § 380.12(g) (2021); 42 U.S.C. § 7475; 42 U.S.C. § 7475; *Alaska Dep't of Env't Conservation v. EPA*, 540 U.S. 461, 470 (2004); *Ala. Power Co. v. Costle*, 636 F.2d 323, 362 (D.C. Cir. 1979); 40 C.F.R. Part 51; 40 C.F.R. § 51.165(b)(2); 42 U.S.C. § 7475(a)(3)(A)-(B) (emphasis added).

¹⁴ *United States v. Clintwood Elkhorn Mining Co.*, 553 U.S. 1, 7 (2008); *Consumer Electronics Ass'n v. FCC*, 347 F.3d 291, 298 (D.C. Cir. 2003); *Massachusetts v. EPA*, 549 U.S. 497, 528-29 (2007); *Public Citizen v. Young*, 831 F.2d at 1111-13; *Alabama Power*, 636 F.2d at 362; *Sierra Club v. EPA*, 705 F.3d 458; *Rise St. James et al. v. Louisiana Dep't Envtl. Quality*, Docket No. 694,029, Sec. 27 (19th Dist. La. Sept. 8, 2022); 75 Fed. Reg. 64,864, 64,894.

¹⁵ 5 U.S.C. § 706(2)(A); 15 U.S.C. § 717b; *Friends of Buckingham*, 947 F.3d 68, 92 (4th Cir. 2020); *Vecinos para el Bienestar de la Comunidad Costera v. FERC*, 6 F.4th 1321, 1331 (D.C. Cir. 2021).

¹⁶ 5 U.S.C. § 706(2)(A); 15 U.S.C. § 717b; *EarthReports, Inc. v. FERC*, 828 F.3d 949, 955 (D.C. Cir. 2016); *City of Shoreacres v. Waterworth*, 420 F.3d 440, 453 (5th Cir. 2005).

¹⁷ 5 U.S.C. § 706(2)(A); 16 U.S.C. § 1531 *et seq*; *Tennessee Valley Authority v. Hill*, 437 U.S. 153, 174 (1978); 50 C.F.R. § 402.02; 50 C.F.R. § 402.15; *Pyramid Lake Paiute Tribe of Indians v. United States Dep't of the Navy*, 898 F.2d 1410, 1415 (9th Cir. 1990); *Center for Biological Diversity v. Salazar*, 804 F.Supp.2d 987, 1010 (D. Ariz. 2010); *Florida Key Deer v. Brown*, 364 F.Supp.2d 1345, 1358 (S.D. Fla. 2005); *Wild Fish Conservancy v. Salazar*, 628 F.3d 513, 521 (9th Cir. 2010); *Conner v. Burford*, 848 F.2d 1441, 1453 (9th Cir. 1988); *Conner v. Burford*, 848 F.2d 1441, 1457-58 (9th Cir. 1988); *Greenpeace v. Nat'l Marine*

ARGUMENT FOR REHEARING

I. FERC FAILED TO ARTICULATE A COHERENT STANDARD FOR THE EXERCISE OF ITS NGA SECTION 3 AUTHORITY

Chairman Glick's concurrence openly admits something that has been apparent for some time: that FERC has no analytical framework for determining whether a proposed LNG export facility is consistent with the public interest, and that, for such projects, FERC does not engage in any meaningful balancing of the benefits and harms to the public interest.¹⁸ FERC's failure to engage in such balancing is contrary to the NGA and to bedrock principles of administrative law.

Fisheries Serv., 80 F. Supp. 2d 1137, 1150 (W.D. Wash. 2000); *Lands Council v. McNair*, 537 F.3d 981, 987 (9th Cir. 2008) (en banc); *Winter v. Nat. Res. Def. Council*, 129 S. Ct. 365, 375 (2008); *Nat'l Wildlife Fed'n v. National Marine Fisheries Serv.*, 524 F.3d 917, 930 (9th Cir. 2008); *American Rivers v. U.S. Army Corps of Eng'rs*, 271 F. Supp. 2d 230, 255 (D.D.C. 2003); *Defenders of Wildlife v. Babbitt*, 130 F. Supp. 2d 121 (D.D.C. 2001); *Nat'l Wildlife Fed'n v. NMFS*, 481 F.3d 1224, 1235 (9th Cir. 2005); *Center for Biological Diversity v. Rumsfeld*, 198 F. Supp. 2d 1139, 1152 (D. Ariz. 2002); *NWF v. NMFS*, 481 F.3d 1224, 1240-41 (9th Cir. 2007); *Southwest Ctr. for Biological Diversity v. Bartel*, 470 F. Supp. 2d 1118, 1141, 1144-46 (S.D. Cal. 2006); *Northwest Env. Advocates v. EPA*, 268 F. Supp. 2d 1255, 1273 (D. Or. 2003); *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 351 (1989); *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983); *Florida Key Deer v. Paulison*, 522 F.3d 1133, 1145 (11th Cir. 2008); *Pyramid Lake Tribe of Indians v. U.S. Navy*, 898 F.2d 1410, 1415 (9th Cir. 1990); *Stop H-3 Ass'n v. Dole*, 740 F.2d 1442, 1460 (9th Cir. 1984); *Baltimore Gas & Electric*, 462 U.S. 87, 97 (1983); *Env'l Prot. Info. Ctr. v. United States Forest Serv.*, 451 F.3d 1005 (9th Cir. 2006); *Lands Council v. Cottrell*, 731 F. Supp. 2d 1074, 1090 (D. Idaho 2010)(quoting *Native Ecosystems Council v. USFS*, 418 F.3d 953, 964 (9th Cir. 2005)); 40 C.F.R. §§ 1508.7, 1508.8; *Te-Moak Tribe of Western Shoshone of Nevada v. U.S. Dept. of Interior*, 608 F.3d 592, 603 (9th Cir. 2010); *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1380 (9th Cir. 1998); *Fritiofson v. Alexander*, 772 F.2d 12225, 1244 (5th Cir. 1985); *Cascadia Wildlands v. Bureau of Indian Affairs*, 801 F.3d 1105, 1110 (9th Cir. 2015); *Fund for Animals v. Hall*, 448 F. Supp. 2d 127, 134-36 (D.D.C. 2006); *Southeast Alaska Conservation Council v. United States Forest Serv.*, 443 F. Supp. 3d 995, 1004-1005 (D. Ak. 2020); *Nat'l Parks Conservation Ass'n v. Babbitt*, 241 F.3d 722, 732 (9th Cir. 2001).

¹⁸ Authorization Order, Glick, concurring, at P2.

DOE's present or future approval to export LNG as a commodity does not deprive FERC of the authority to deny an associated infrastructure proposal, in whole or in part. Congress, in drafting the NGA, provided separate authority for the approval of exports and for the approval of infrastructure.¹⁹ Nothing in the statute indicates that approval under subsection (a) means that an application under subsection (e) must be granted. And FERC has previously used its section 717b(e) authority to deny an application for an import terminal where FERC concluded that, although "the construction and operation of additional facilities to import LNG is vitally important to help meet energy demands," the particular proposed infrastructure would be unsafe and contrary to the public interest.²⁰

FERC cannot limit itself to rejecting export and import infrastructure only when it would violate other statutory requirements or, as in *KeySpan*, another agency's standards. Congress didn't. FERC has more than a clerical responsibility to ensure that proposed projects check the boxes of securing other needed permits.²¹ FERC is the *lead* agency with authority over export infrastructure, with the authority and responsibility to decide whether a proposed project is contrary to the public interest, even where it does not violate other prohibitions. As Chairman

¹⁹ 15 U.S.C. §§ 717b(a), (e).

²⁰ *KeySpan LNG, L.P.*, 112 FERC ¶ 61,028, PP5-6 (July 5, 2005).

²¹ Of course, even doing that would in some ways be a more rigorous level of review than FERC applied here, as FERC issued *its* authorization before those boxes had been checked.

Glick stated, “there must be some degree of adverse impact so great that the public interest requires FERC to reject a section 3 application.”²² And this must be a balancing test, weighing the degree of harm against the magnitude of the benefit. Would FERC approve the Project if the environmental harms were the same but would provide only 50%, or only 10%, of the purported benefit? FERC’s analysis here gives no indication. DOE’s present or future of exports is evidence that infrastructure that would enable those exports provides public benefits, but FERC wrongly treats it as determinative, leaving no room to weigh benefits against harms. FERC has failed to articulate a standard for determining whether a project’s harms outweigh its benefits, or to apply such a standard here. FERC’s failure to do so renders FERC’s decision arbitrary and deserving of reversal.

We agree that the bifurcation of authority between FERC and DOE makes this analysis difficult, although not all of the problems with FERC’s analysis derive from that bifurcation. But that bifurcation is not, as Chairman Glick suggests, Congress’s fault. DOE, not Congress, bifurcated NGA section 3 authority between itself and FERC. Insofar as this division has proven unworkable or unwise in practice, DOE should rescind or modify its delegation order, and FERC should advocate for such a change. FERC’s hands are not as tied as Chairman Glick contends.

²² Authorization Order, Concurrence of Chairman Glick, at P 7.

II. ALTERNATIVES

As explained in Sierra Club et al.’s protest,²³ Commonwealth LNG explicitly proposes a cheap and inefficient facility design and seeks to minimize capital costs and to maximize the amount of LNG produced on the available footprint. In pursuing these goals, Commonwealth LNG has externalized costs to the surrounding communities and environment, by repeatedly choosing, for example, less-efficient designs that produce higher emissions.

FERC shirked its duty to exercise oversight regarding these choices. FERC failed to even acknowledge that this is what was happening. Rather than acknowledge that Commonwealth LNG had chosen cheap options for economic reasons, and pass judgment as to whether doing so was consistent with the public interest, the Project’s final EIS invents spurious and unsupported arguments as to why less polluting alternatives are unavailable. The EIS fails to provide the rigorous exploration of alternatives required by NEPA, and the Authorization Order fails FERC’s obligation to ensure that the Project is consistent with the public interest under the NGA.

A. FERC Cannot Categorically Reject Alternatives That Would Not Enable the Full Volume of Proposed Exports

FERC rejected design alternatives that would use more efficient liquefaction technology, and all other system alternatives, for effectively the same reason: FERC’s conclusion that neither would allow Commonwealth LNG and other would-

²³ Accession 20210803-5103 at 3.

This argument fails even if its absurd premise is accepted. As explained above, not all LNG terminals are created equal. Some use more efficient liquefaction designs, emitting fewer greenhouse gasses and other pollutants per ton of LNG produced. If those more efficient designs can't be used here, a site and project where they can be might better serve the public interest. Thus, there is no reason for FERC to assume that a hitherto-unplanned expansion of an existing project using a more efficient design would have impacts as bad as Commonwealth LNG's.

But the absurd premise that no other proposals have available capacity must not be accepted. Even FERC doesn't believe that these other projects will all move forward. Instead, FERC acknowledges that many of these proposed projects may not be built. EIS 3-27. But rather than exercise its oversight authority, FERC abdicates to the market, proclaiming that "market forces will ultimately decide which and how many of these facilities are built." *Id.* FERC has not justified relying on the market to protect the public interest. The same factor that makes Commonwealth LNG *less* beneficial to the public—its choice of cheaper, less-efficient liquefaction technology—presumably makes it *more* attractive to investors. Here, as in other arenas, blind deference to the market risks incentivizing a race to the bottom that fails to protect the public.

B. Design Alternatives

Even within the scope of alternatives that would provide the proposed export capacity, FERC failed to rigorously explore and arbitrarily rejected multiple

reasonable alternatives. Although rejection of these design alternatives was individually unwarranted, collectively, the situation is even worse, as FERC's reasons for rejecting alternatives appear to contradict one another. Several alternatives here potentially require a trade-off between air emissions and terminal footprint. FERC rejects one alternative (omitting a storage tank) that would reduce the footprint on the ground because it claims that would cause an unacceptable increase in air emissions, without any discussion of what that increase would be. But FERC rejects other alternatives that would reduce air pollution by potentially much greater amounts, on the ground that they would increase the terminal footprint. FERC's failure to address both sides of the scale when discussing these tradeoffs, and to explain FERC's inconsistent treatment of environmental impacts across discussions of different alternatives, falls short of the hard look required by NEPA. And this incomplete, inconsistent treatment gives the impression that rather than meaningfully scrutinizing these alternatives and fulfilling its oversight responsibility, FERC merely sought justifications for approving Commonwealth LNG's preferred design.

1. On-Site Power Generation

The approved design would use two on-site simple-cycle gas turbines (with a third, unused spare) to generate electricity used on site, and six additional gas turbines mechanically powering liquefaction equipment. Running turbines in combined-cycle, rather than simple-cycle, configurations significantly reduces emissions for two reasons.

First, combined-cycle configurations burn less gas. As the EIS notes, a “combined cycle power plant converts more energy from fuel gas to electricity than simple cycle generators.” EIS at 3-48. Commonwealth LNG plans to use Siemens SGT-A65E combustion turbines.²⁸ In simple-cycle configuration, these turbines operate at roughly 43% efficiency.²⁹ In a combined cycle power generation configuration, these same turbines operate at 54-55% efficiency.³⁰ Other turbines in combined cycle configurations can achieve similar or greater efficiencies.³¹

Second, combined-cycle configurations can emit less pollution per unit of gas burned. For example, here, Commonwealth LNG’s air permit imposes a NO_x emission limitation off 2.5 ppmvd for the nine turbines.³² Combined-cycle gas

²⁸ Accession 20210604-5170, Environmental Information Request, Supplemental Responses, Appendix A, Initial Part 70 Operating and Prevention of Significant Deterioration Permit Application, Appendix F-3.

²⁹ Siemens, “SGT-A65 gas turbine” (2018), attached.

³⁰ *Id.*

³¹ National Energy Technology Laboratory, *Cost and Performance Baseline for Fossil Fuel Energy Plants Vol. 1: Bituminous Coal and Natural Gas to Electricity*, NETL-PUB-22638, at 493 (Sept. 24, 2019) (“NETL 2019”), available at https://netl.doe.gov/projects/files/CostAndPerformanceBaselineForFossilEnergyPlantsVol1BitumCoalAndNGtoElectBBRRev4-1_092419.pdf and attached to Sierra Club et al.’s comment on the DEIS.

³² Accession 20210604-5170, Environmental Information Request, Supplemental Responses, Appendix A, Initial Part 70 Operating and Prevention of Significant Deterioration Permit Application, at 3-24.

turbines are routinely subject to “best available control technology” NO_x limits of 2.0 ppmvd.³³

Because switching to a combined-cycle configuration would use less gas and emit less pollution per unit of gas used, it represents an opportunity to significantly reduce air pollution from the turbines, which are responsible for most of the anticipated emissions of most pollutants, including NO_x, GHGs, and particulates. EIS at 4-224. The EIS acknowledges two ways to employ combined-cycle turbines: by replacing all turbines with 500-MW of electrical generation, and using that to power liquefaction equipment, or by replacing just the 120-MW of proposed on-site electrical generation with combined cycle units. EIS 3-48. But the EIS then fails to take a hard look at these alternatives, and its reasons for rejecting them were arbitrary.

a. Electrifying Liquefaction Equipment

The larger change would be to replace all of these turbines with an on-site combined-cycle gas-fired power plant. The EIS concludes that this would require a 500-megawatt plant. EIS 3-48. The EIS rejects this alternative on the ground that such a plant “would require an approximately 100-acre footprint.” *Id.* This is completely unsupported—FERC offers no explanation as to how it arrived at this

³³ Sierra Club, Comments on Commonwealth PSD Application, at 27, and Report of Dr. Ranajit Sahu, § B.1, (together attached to Sierra Club’s Comments on the DEIS, Accession 20220523-5151, <https://elibrary.ferc.gov/eLibrary/filedownload?fileid=2E5D3E43-1AF1-C25F-8A51-80FCB6600000>).

estimate, i.e., there is no citation to existing or planned plants that required such a footprint, etc.

This unsupported estimate is also implausible, as demonstrated by the footprints required for other modern facilities. For example, Entergy is currently developing the Orange County Advanced Power Station in Bridge City, Texas. This combined cycle facility will generate 1,215 megawatts of power,³⁴ but will permanently impact only 26.2 acres,³⁵ generating roughly ten times more power per acre than what FERC assumed was possible here. Similarly, the Nemadji Trail Energy Center Generation Project in Wisconsin would be a combined-cycle gas plant generating 625 megawatts of power on a permanent footprint of 26.3 acres.³⁶ The EIS provides no reason to assume that a similarly space-efficient power plant could not be constructed here. Although each of these projects would require additional temporary workspace, there is no reason to doubt that the laydown yards and temporary workspaces already incorporated into the Commonwealth LNG design would be sufficient for construction of the power plant.

³⁴ Entergy, About the Project, *available at* <https://www.entropy.com/entergypowerstexas/project/>, attached.

³⁵ Entergy, Application for major amendment of Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0000336000 at 13, *available at* <https://entropy.com/userfiles/OCPS/TPDES1.pdf>, attached.

³⁶ Wisconsin Department of Natural Resources, Nemadji Trail Energy Center Generation Project Final Environmental Impact Statement, at X-XI, *available at* <https://apps.psc.wi.gov/ERF/ERFview/viewdoc.aspx?docid=376466>, attached.

In addition to overestimating the space that would be required for a larger powerplant, the EIS ignored the possibility that this increase in space would be offset by a reduction in space needed for liquefaction equipment. Switching the liquefaction equipment to use of electric motors, rather than individual gas turbines, would likely reduce the footprint of that portion of the project.

The EIS therefore fails to provide any supported or plausible estimate of the extent to which switching to electrically driven liquefaction powered by an on-site combined-cycle gas plant would increase the overall facility footprint. Even if such a design would require some net increase in footprint, there is no reason to assume that this increase would be so large as to make this alternative self-evidently infeasible or more environmentally harmful.

Nor did the EIS discuss the extent to which such a design would decrease total air emissions. Because the EIS fails to demonstrate that an all-electric configuration would be infeasible, and because the EIS fails to reasonably estimate either the environmental benefits or the environmental drawbacks of this alternative, the EIS fails to rigorously explore this alternative, and falls short of NEPA's requirements.

b. Using Combined-Cycle Units for the Proposed 120-MW of on-site power generation

A second option (and smaller reconfiguration) would be to use a combined-cycle generation for the proposed on-site power needs. The EIS's arguments for rejecting this alternative are even less supported than for the preceding alternative.

The EIS concludes that switching to a combined-cycle design for on-site electrical generation would reduce “overall site fuel consumption, and thereby emissions, ... by less than 10 percent.” EIS 3-48. Total facility emissions are 3.6 million tons per year of carbon dioxide equivalent, 554 tons per year of NOx, etc. EIS 4-224. Even if this comment was meant to refer solely to stationary source emissions, the totals are 3.5 million and 376 tons per year, respectively. *Id.* Reducing any of those numbers by roughly 10% would be a significant improvement. FERC cannot write this off, without explanation, as *de minimis* and not worth exploring.

The EIS also fails to demonstrate that this alternative would be infeasible or have major environmental drawbacks. The EIS dismisses this alternative by arguing that it would increase the Project’s footprint, but offers no explanation of by how much, or why that increase would be significant. Existing combined cycle generators demonstrate that a facility capable of providing 120 MW of power need not be drastically larger than what is already proposed. It appears that the proposed electrical generation facilities would occupy roughly two acres. The Malburg Generating Station in California, which has been operating since 2005,³⁷ produces 134 megawatts with a footprint of 3.4 acres.³⁸ The Donald Von Raesfeld

³⁷ California Energy Commission, Malburg Generating Station, available at <https://www.energy.ca.gov/powerplant/combined-cycle/malburg-generating-station>, attached.

³⁸ California Energy Commission, Staff Assessment: Malburg Generating Station Project, at 3-1 (Sept. 26, 2002), available at

Project, also known as the Pico Power Project, has also operated since 2005,³⁹ and produces 122 MW, with the ability to peak fire at 147 megawatts, on 2.86 acres.⁴⁰ Further, we note that combined cycle configurations are available for both the Siemens SGT-A65 turbines Commonwealth LNG proposes to use here,⁴¹ for smaller Siemens A-series turbines that could provide the required power in a combined cycle configuration,⁴² or for other Siemens turbines.

Thus, it is unclear whether this option would require expanding the fenceline at all. Even if switching to combined cycle electrical generation would require a larger footprint than is currently provided for the generating turbines, the increase may be small enough that it could be accommodated through a site reconfiguration, without expanding the fenceline.

<https://efiling.energy.ca.gov/GetDocument.aspx?tn=31774&DocumentContentId=66034>, attached.

³⁹ California Energy Commission, Donald Von Raesfeld Project, *available at* <https://www.energy.ca.gov/powerplant/combined-cycle/donald-von-raesfeld-project>, attached.

⁴⁰ California Energy Commission, Staff Assessment: Pico Power Project, at 3-1 (March 26, 2003), available at <https://efiling.energy.ca.gov/GetDocument.aspx?tn=28409&DocumentContentId=69781>, attached.

⁴¹ Siemens, “SGT-A65 gas turbine” (2018), *supra* note 29.

⁴² Siemens, SGT-A35 aeroderivative gas turbine”, <https://www.siemens-energy.com/global/en/offering/power-generation/gas-turbines/sgt-a30-a35-rb.html>

In the alternative, it is hardly self-evident that the environmental impact of a 1-2 acre increase in footprint would outweigh the environmental benefit of reducing greenhouse gas emissions by 300,000 tpy CO₂e, NOx by 30 tpy, etc.

Accordingly, the EIS fails to rigorously explore the option of replacing the 120 MW of onsite electrical generation with an equivalent combined-cycle facility.

2. Carbon Capture and Sequestration

FERC similarly fails to rigorously explore, or to justify rejection of, carbon capture and sequestration (CCS), either for all or part of the project's emissions. See EIS 4-398 (agreeing that it would be feasible to capture Commonwealth LNG's pretreatment CO₂ emissions).⁴³ While the EIS omits the draft EIS's (DEIS) absurd suggestion that FERC would not consider CCS simply because Commonwealth LNG had not proposed it (compare DEIS 4-364 with EIS 4-398 to -399), FERC still fails to actually make and support a judgment about whether CCS would be feasible or environmentally beneficial.

FERC did not demonstrate that CCS would be infeasible. The EIS reports that "*Commonwealth* states that due to a lack of sequestration infrastructure, carbon capture and sequestration are not feasible for this project." EIS 4-398 (emphasis added). The EIS does not indicate whether FERC agrees with this

⁴³ Although the EIS explicitly agrees that capture of pretreatment emissions would be feasible, the EIS does not address capture of combustion emission, and provides no reason to believe that it would be infeasible to capture these emissions as well. EIS 4-398. Other LNG projects, such as Rio Grande LNG, have proposed capture of post-combustion emissions.

determination of infeasibility. Nor does the EIS provide information that would support such a determination. The Denbury Green Pipeline is not “still in development,” *id.*, it was completed more than a decade ago, in 2010.⁴⁴ And while the Gulf Coast Sequestration Project is still in development, its developers recently announced an anticipated launch date of 2024.⁴⁵ Given the long lifespan of the project, FERC cannot limit analysis to sequestration opportunities that would be available in the first year of Commonwealth LNG’s operation. Given the volume of emissions at issue here, FERC must explore whether it would be feasible and beneficial to develop additional sequestration options, rather than limiting consideration to already proposed or operational sequestration projects. Moreover, the fact that other developers have proposed to incorporate CCS into multiple other LNG terminals, including some in Commonwealth LNG’s immediate vicinity, further indicates the potential feasibility of CCS. EIS 4-399. As does the fact that DOE continues to invest in CCS research.⁴⁶

⁴⁴ Denbury, Pipeline Network, *available at* <https://www.denbury.com/operations/pipeline-network/>.

⁴⁵ Gulf Coast Sequestration and Climeworks Sign MOU to Develop First Direct Air Capture and Storage Hub on the Gulf Coast in Louisiana, Business Wire (Nov. 21, 2022), *available at* <https://www.businesswire.com/news/home/20221121005556/en/Gulf-Coast-Sequestration-and-Climeworks-Sign-MOU-to-Develop-First-Direct-Air-Capture-and-Storage-Hub-on-the-Gulf-Coast-in-Louisiana>.

⁴⁶ See U.S. Dept. of Energy, Office of Fossil Energy and Carbon Management, U.S. Department of Energy Invests \$31 Million to Advance Carbon Capture and Storage for Natural Gas Power and Industrial Sectors, *available at*

Because the EIS did not demonstrate that CCS would be infeasible, NEPA requires FERC to rigorously explore the environmental impacts of this alternative. CCS, especially if applied to combustion emissions rather than merely pretreatment, would reduce direct emissions of greenhouse gases and some other pollutants, but it would increase water intake and discharge, net energy usage, and could have other impacts relating to the sequestration process. NEPA requires FERC to take a hard look at these issues, but FERC provided no discussion whatsoever here.

3. Storage tanks

Commonwealth LNG initially proposed a facility with 240,000 cubic meters of storage tank capacity, to be provided by six 40,000 m³ tanks. After Commonwealth LNG proposed increasing the size of these tanks to 50,000 m³, Sierra Club et al. proposed omitting one of the tanks, which would still provide more storage capacity than was originally proposed while also allowing Commonwealth LNG to reduce the facility footprint.

The EIS rejects this alternative by acknowledging that it could reduce wetland impacts, but by speculating that this environmental benefit would be outweighed by an increase in air pollution. EIS 3-46. Specifically, the EIS concludes that omitting one storage tank could reduce wetland impacts by 2.3 acres. *Id.* The

<https://www.energy.gov/fecm/articles/us-department-energy-invests-31-million-advance-carbon-capture-and-storage-natural>

EIS's assertion that this alternative would increase air pollution rests on an unsupported chain of events:

1. The EIS argues that inclement weather "frequently" closes the ship Calcasieu ship channel, but it does not specify how often this occurs.
2. The EIS indicates that during a prolonged closure, Commonwealth LNG may fill its available storage and have nowhere to send additional LNG, requiring the facility to shut down. But the EIS does not indicate how long this would take (under either storage configuration), or how often such closures occur.
3. The EIS states that such shutdowns will increase air pollution by requiring the facility to shut down and then restart, but the EIS does not identify which components this applies to, or the emissions associated therewith.

Because the EIS fails to provide any indication of how much more frequently shutdown events would occur under a five storage tank alternative, or any indication of what the emissions per event would be, the EIS does not even vaguely suggest what effect this alternative would have on reasonably foreseeable annual emission levels. This falls short of a hard look, and cannot justify rejection of this alternative.

Moreover, for the reasons stated above, the 2.3 acres of impacts to wetlands that the EIS dismisses as not a major factor when discussing storage tanks are likely enough to enable Commonwealth LNG to use a combined cycle onsite power

plant, an alternative that the EIS states would reduce total facility emissions by up to 10%. The EIS offers no reason to believe that the increase in flaring related to omission of a storage tank would increase emissions by that amount. Thus, insofar as FERC must balance impacts to wetlands and habitat against impacts relating to air pollution, it seems as though both resources could be better protected by omitting one storage tank while simultaneously switching to combined cycle electrical generation.

C. In violation of NEPA, FERC authorized the Project without evaluating a true “no action” alternative.

NEPA requires that FERC “[e]valuate reasonable alternatives to the proposed action” and “include the No-Action Alternative”⁴⁷ This alternatives analysis must “[r]igorously explore and objectively evaluate all reasonable alternatives” to the proposed action, including the “No-Action Alternative” in which it is assumed that the project does not go forward.⁴⁸

Applying these principles here, it is clear that FERC’s No-Action Alternative is inconsistent with NEPA. Consistent with Council on Environmental Quality (CEQ) guidance, FERC correctly identifies that “in instances involving federal decisions on proposals for projects, no-action would mean the proposed activity would not take place and the resulting environmental effects from taking no-action would be compared with the effects of permitting the proposed activity” and that

⁴⁷ 40 C.F.R. § 1502.14.

⁴⁸ *City of Shoreacres v. Waterworth*, 420 F.3d 440, 450 (5th Cir. 2005)

III. GREENHOUSE GAS EMISSIONS

Despite the “tangled web of regulatory processes”⁵⁵ that comprise the review of an LNG export terminal project, FERC is still required by NEPA and the NGA to consider the direct and cumulative effects on climate change in its public interest analysis and to determine whether a project’s reasonably foreseeable GHGs are significant.⁵⁶ As explained in Part I, *supra*, Section 3 of the NGA provides for two independent public interest determinations: One regarding the import or export of LNG and one regarding the facilities used to import or export LNG. DOE determines whether the import or export of LNG is consistent with the public interest, with transactions among FTA countries legislatively deemed to be as such.⁵⁷ FERC determines whether “an application for the siting, construction, expansion, or operation of an LNG terminal” is consistent with the public interest.⁵⁸ In order to evaluate the environmental consequences of the Project under NEPA, FERC must consider the harm caused by the Project’s GHGs and “evaluate the incremental impact that these emissions will have on climate change or the environment more generally.”⁵⁹ While quantification of the Project’s direct GHG

⁵⁵ *Sierra Club v. FERC*, 827 F.3d 36, 40 (D.C. Cir. 2016) (hereinafter *Freeport I*).

⁵⁶ 40 C.F.R. § 1502.16(a)(1).

⁵⁷ 15 U.S.C. § 717b(c).

⁵⁸ 15 U.S.C. § 717b(e).

⁵⁹ *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1216 (9th Cir. 2008).

emissions is a necessary step toward meeting FERC's NEPA obligations, merely counting the volume of emissions is insufficient.⁶⁰ For direct emissions, FERC's mandate under NEPA and the NGA is crystal clear – it is obliged to make a significance determination of a project's foreseen operational and construction-related direct GHG impacts.⁶¹ FERC's failure to do so here expressly violates NEPA, and in turn, poisons FERC's Section 3 NGA public interest balancing.

As for indirect emissions, *Freeport I* was wrongly decided, and further, its conclusions as to indirect emissions are functionally void given the DOE's 2020 Categorical Exclusion for LNG projects.⁶² FERC should have determined the significance of the Project's indirect emissions, and its failure to do so was arbitrary and capricious. FERC's dereliction of this duty was arbitrary and capricious in violation of NEPA and unlawful under the NGA.

⁶⁰ See *Ctr. for Biological Diversity*, 538 F.3d at 1216 (“While the [environmental document] quantifies the expected amount of CO₂ emitted . . . , it does not evaluate the ‘incremental impact’ that these emissions will have on climate change or on the environment more generally.”); *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 995 (9th Cir. 2004) (“A calculation of the total number of acres to be harvested in the watershed is a necessary component . . . , but it is not a sufficient description of the actual environmental effects that can be expected from logging those acres.”).

⁶¹ *Freeport I*, 827 F.3d at 41, 46.

⁶² 85 Fed. Reg. 78,197.

A. Direct Emissions

Turning to FERC's refusal to make a significance determination for direct project GHG's, FERC's failure is conclusively unlawful under the NGA and NEPA.

In the Authorization Order, FERC entirely disclaims itself of the ability to consider the significance of direct GHG impacts due to an alleged inability to do so. In its EIS, FERC explicitly stated that the document is "not characterizing the Project's GHG emissions as significant or insignificant because the Commission is conducting a generic proceeding to determine whether and how the Commission will conduct significance determinations going forward." EIS at 4-396. The EIS includes an acknowledgement of the Project's operational emissions, "contextualizing" them in comparison to the total GHG emissions of the United States as a whole, and to the State of Louisiana. *Id.* FERC also utilizes social cost of GHG analysis as a method of quantifying, in dollars, "estimates of longterm damage that may result from future emissions of CO₂, nitrous oxide, and methane," and utilizes values from the Interagency Working Group (IWG) on Social Cost of Greenhouse Gases' interim values for calculating the social cost of GHGs, finding that "emissions from construction and operation of this Project up to 2050 are calculated to result in a total social cost of GHGs equal to \$909,939,824, \$3,590,938,694, and \$5,481,667,409, respectively (all in 2020 dollars)." EIS at 4-397.

While FERC has demonstrated it can indeed apply administrative tools to estimate the social cost of the projects it authorizes, disclose those costs, or compare project emissions against other numeric benchmarks, it still refuses to engage in

making an actual, explicit assessment as to whether Commonwealth LNG's emissions are significant. FERC's continued refusal to consider the significance of the lifecycle climate impacts associated with the gas that will flow through the Project is contrary to the "hard look" that NEPA requires.⁶³ In its Authorization Order, FERC concludes that because it "quantified and contextualized the project's construction and operational GHG emissions[,] recognized that the project's contribution to GHG emissions will incrementally contribute to future global climate change impacts, and described those potential impacts in the region" it has "substantively complied with NEPA[.]"⁶⁴ In expressly declining to make an actual significance determination for these emissions or provide a rational explanation for why it can't, it plainly has not.⁶⁵

Since its February 2020 order in the Venture Global Calcasieu Pass LNG (Calcasieu Pass) terminal project,⁶⁶ FERC has engaged in different games of "logical hopscotch[.]"⁶⁷ where it disclaims the ability to discern the significance of a project's

⁶³ *Balt. Gas & Elec. Co. v. N.R.D.C.*, 462 U.S. 87, 97, 103 S.Ct. 2246, 76 L.Ed.2d 437 (1983).

⁶⁴ Authorization Order, 181 FERC ¶ 61,143 at P 76.

⁶⁵ Authorization Order, 181 FERC ¶ 61,143 at P 75 ("[T]he Commission is not herein characterizing these emissions as significant or insignificant.").

⁶⁶ *Venture Global Calcasieu Pass, LLC*, 166 FERC ¶ 61,144 (2019).

⁶⁷ See, *Jordan Cove Energy Project L.P.*, 171 FERC ¶ 61,136, PP 245, 253 (2020) (Rehearing Order) (Glick, Comm'r, dissenting at P 7).

climate effects while ultimately concluding that projects are environmentally acceptable. Ironically, the only difference between the GHG significance ‘conclusions’ in the Authorization Order at issue here and the flawed approach used by FERC in Calcasieu Pass (or Jordan Cove, as another example) is that, here, FERC acknowledges that the Project will have significant impacts, and that it acknowledges it has an obligation to determine the significance of the Commonwealth LNG project’s GHGs.⁶⁸ Nonetheless, FERC fails to make that determination, punting to “some day intentions” to identify, finalize and apply its desired method for making significance determinations. EIS at 4-396.

Also since Calcasieu Pass, including in this EIS, FERC has included national and state emissions for “context” and as described, *supra*, FERC also utilizes the social cost of GHGs administrative tool to output a social cost of GHG’s in this review. To the extent that FERC actually attempted to substitute these analyses for a significance determination about the Project’s climate effects, it must so state, and failure to do so is arbitrary and capricious and violates both the NGA and NEPA.⁶⁹

⁶⁸ Authorization Order, 181 FERC ¶ 61,143 at P 75. In prior orders, where the Commission has identified no significant effects, it has disclaimed an ability to determine the significance of a project’s climate change effects. *Compare Venture Global Calcasieu Pass, LLC*, 166 FERC ¶ 61,144 (2019), at P 113 (“The Commission has also previously concluded it could not determine whether a project’s contribution to climate change would be significant”), *with id.* at P 16 (“All impacts from construction and operation of the facilities will be reduced to less than significant levels.”).

⁶⁹ See *Utahns for Better Transp. v. U.S. Dep’t of Transp.*, 305 F.3d 1152, 1162 (10th Cir. 2002) (NEPA “requires agencies to consider environmentally significant aspects of a proposed action, and, in so doing, let the public know that the agency’s

It is hard to understand what “context” these figures could play if they were not utilized to make an unstated significance determination about the Project’s climate effects. Additionally, FERC cannot simultaneously proclaim an inability to analyze the significance of an acknowledged environmental effect of the Project while concluding that the environmental impacts associated with the projects are sufficiently acceptable so as to find Commonwealth LNG consistent with the NGA.

This continual “punt” on its obligation to conduct significance determinations defies reason, has been criticized by Commissioners, and was expressly criticized in the concurrences to this order.⁷⁰ As raised by Chairman Glick, FERC has, in past instances, demonstrated that it can indeed engage in such analysis.⁷¹ In refusing to assess the significance of the Project’s GHGs, the Authorization Order “effectively writes climate change out of the public interest determination entirely.”⁷² Relevant to the Chairman’s contention, “as a logical matter, the argument that there is no single standard methodology for evaluating the significance of GHG emissions does

decisionmaking process includes environmental concerns.”). The Commission states that it includes the national and state emissions quantities to “contextualize the project’s proposed emissions[,]” but how the Commission actually uses this figure in its analysis is unstated and is unclear.

⁷⁰ See Authorization Order, 181 FERC ¶ 61,143 (Glick, Chairman, concurring at P 3).

⁷¹ *N. Nat. Gas Co.*, 174 FERC ¶ 61,189, at P 32 (2021).

⁷² See *Venture Global Calcasieu Pass LLC*, 166 FERC ¶ 61,144 (2019) (Glick, Comm’r, dissenting at P 6 & n.11).

not prevent the Commission from adopting a methodology, even if other potential methods are available.”⁷³ Although FERC’s Interim GHG policy statement⁷⁴ remains a draft, FERC nonetheless bears the obligation to engage in a GHG significance determination, and its failure to do so for the Commonwealth LNG project is arbitrary and capricious. In its initiation, introduction, and approval of its Interim GHG policy statement, FERC itself admitted that it has identified some potential pathways for making GHG significance determinations. Additionally, in this docket and others, FERC has been presented with a number of sound options with which it could adopt and utilize to assess whether a project’s CO2 emissions are significant.⁷⁵

B. Indirect Emissions

Sierra Club et al. and NRDC submitted comments on the DEIS calling on FERC to include, in the NEPA analysis, a hard look at the reasonably foreseeable environmental impacts upstream of the Project (sourcing the gas to be exported, which U.S. Energy Information Administration modeling says will predominantly

⁷³ *Id.* at P 7.

⁷⁴ *Certification of New Interstate Nat. Gas Facilities Consideration of Greenhouse Gas Emissions in Nat. Gas Infrastructure Project Revs.*, 178 FERC ¶ 61,197 at P 2 (2022).

⁷⁵ See e.g., Sierra Club et. al., DEIS Comments at 22-23. See also Motion for Leave and Supplemental Reply Comments of Natural Resources Defense Council, Accession No. 20220923-5190, Docket Nos. PL18-1-000, PL21-3-000 (September 23, 2022).

segmentation and consider “connected” actions.⁹³ But courts must interpret statutes as a whole, and *Freeport I*’s refusal to consider these aspects of the NGA and NEPA undermined *Freeport I*’s conclusions regarding FERC’s NGA authority and NEPA obligations. Indeed, DOE and FERC’s apparent post- *Freeport I* confusion and disagreement about where one agency’s authority ends and another begins demonstrates that attempting to draw a sharp line between the agencies’ authorities is unworkable. Thus, we agree with the EPA that *Freeport I* and subsequent cases erred in holding that there was not a reasonably close causal chain linking FERC’s approval of export infrastructure to the production and use of exported gas, and that FERC therefore could omit such lifecycle effects from NEPA review.

Articulating its intention to comply with its legal obligations as it relates to other, unrelated, possible future projects does not equal fulfillment of FERC’s obligation to engage in significance assessments for *this* project.

IV. AIR IMPACTS AND ENVIRONMENTAL JUSTICE

A. FERC’s determination that Commonwealth LNG’s air pollution impacts would be less than significant is arbitrary and unlawful.

The final EIS also fails to properly evaluate the disproportionate adverse air quality impacts that the Commonwealth LNG facility would have in environmental justice communities. As such, the EIS fails to provide the rigorous exploration of alternatives and mitigation measures that NEPA requires.

⁹³ 827 F.3d at 45-46.

In conducting its NEPA review, FERC follows Executive Order 12898, which directs federal agencies to identify and address “disproportionately high and adverse human health or environmental effects” of their actions on minority and low-income populations (*i.e.*, environmental justice communities).⁹⁴ As EPA has explained, “disproportionately high and adverse effects should trigger the serious consideration of alternatives and mitigation actions in coordination with extensive community outreach efforts.”⁹⁵

Here, FERC concluded that there are 91 environmental justice communities that may be adversely affected by the Commonwealth LNG project, including communities as close as 0.1 mile away from the project.⁹⁶ And based on air quality modeling Commonwealth LNG conducted under the Clean Air Act’s Prevention of Significant Deterioration (PSD) program,⁹⁷ FERC found “that operation of the

⁹⁴ Authorization Order, 181 FERC ¶ 61,143 at P 45; Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 16, 1994); *see also* 18 C.F.R. § 380.12(g) (2021) (requiring applicants for projects involving significant aboveground facilities to submit information about the socioeconomic impact area of a project for the Commission’s consideration during NEPA review); Commission, *Guidance Manual for Environmental Report Preparation* at 4-76 to 4-80 (Feb. 2017), available at <https://www.ferc.gov/sites/default/files/2020-04/guidance-manual-volume-1.pdf>.

⁹⁵ EPA, *Final Guidance for Incorporating Environmental Justice Concerns in EPA’s NEPA Compliance Analyses* § 3.2.2. (Apr. 1998), available at https://www.epa.gov/sites/default/files/2015-02/documents/ej_guidance_nepa_epa0498.pdf (hereinafter “EPA EJ Guidance”).

⁹⁶ Authorization Order, 181 FERC ¶ 61,143 at P 50.

⁹⁷ 42 U.S.C. § 7475

project (including LNG terminal stationary sources and mobile sources) may contribute to a potential nitrogen dioxide (NO₂) 1-hour National Ambient Air Quality Standards (NAAQS) exceedance” and that a “majority of these potential exceedances within the modeled area would be within environmental justice communities.”⁹⁸ FERC nevertheless concluded that Commonwealth LNG would have “insignificant” air quality impacts in surrounding environmental justice communities.⁹⁹ Thus, FERC failed to evaluate alternatives that could avoid or minimize those impacts.

That determination is arbitrary and unlawful, for several reasons. First, FERC’s obligation under NEPA to identify and mitigate adverse impacts environmental justice communities is fundamentally different, and broader, than the “significance” analysis under the Clean Air Act’s PSD program. Specifically, under that program, new sources “demonstrate[s]” that their emissions will “not cause or contribute” to any violation of the NAAQS.¹⁰⁰ An applicant “demonstrate[s]” compliance with the NAAQS with standardized computer modeling.¹⁰¹ If that modeling demonstrates that the source causes or contributes to

⁹⁸ *Id.* at P 63.

⁹⁹ *Id.*

¹⁰⁰ See 42 U.S.C. § 7475; *Alaska Dep’t of Env’t Conservation v. EPA*, 540 U.S. 461, 470 (2004); *Ala. Power Co. v. Costle*, 636 F.2d 323, 362 (D.C. Cir. 1979).

¹⁰¹ See 40 C.F.R. Part 51, App. W §§ 8.1, 8.3, 9.2.

a NAAQS violation, the permitting authority cannot issue a PSD permit unless the source reduces its impacts or mitigates the predicted NAAQS violation.¹⁰² Even if modeling indicates that an area will violate the NAAQS, however, air permitting agencies may issue a permit if the source's modeled impacts are below the significant impact level (SIL).

But the PSD significant impacts analysis looks *only* at a source's pollution contribution to potential NAAQS violations at a specific location in "time and space" that the model predicts will exceed the NAAQS.¹⁰³ The analysis says nothing about the source's maximum pollution contribution. Nor does a SILs analysis say anything about the cumulative pollution impacts of the proposed project in areas that are already suffering from unhealthy air quality.

In conducting its NEPA review, by contrast, FERC must evaluate all of the direct, indirect, and cumulative effects that project may have on environmental justice communities, even if the project's air emissions do not exceed the SIL at the precise time and location of any predicted NAAQS violation. Here, FERC's own air

¹⁰² See, e.g., 40 C.F.R. § 51.165(b)(2) (requiring a major stationary source that contributes to the violation of the NAAQS to "reduce the impact of its emissions upon air quality by obtaining sufficient emission reductions to, at a minimum, compensate for its adverse ambient impact where the major source or major modification would otherwise cause or contribute to a violation . . .").

¹⁰³ EPA guidance indicates that "the significant contribution analysis should be based on a source's contribution to the modeled violation paired in time and space." EPA, Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO₂, National Ambient Air Quality Standard at 3 (Mar. 1, 2011) (hereinafter "NO₂ Modeling Guidance").

quality modeling indicates that the areas surrounding Commonwealth LNG, including numerous environmental justice communities, already experience or are likely to experience unhealthy levels of NO₂ pollution. A “majority of these potential exceedances within the modeled area would be within environmental justice communities.”¹⁰⁴ Yet, the EIS fails to evaluate the cumulative, incremental impact of Commonwealth LNG’s additional pollution to those areas already suffering from unhealthy air.

Second, FERC’s “insignificance” determination is based on the erroneous premise that air pollution is of no concern so long as Commonwealth LNG’s share of that pollution is below the so-called SILs used by state permitting agencies to assess whether a source contributes to a violation of the NAAQS.¹⁰⁵ As the record makes clear, however, Commonwealth LNG is, by itself, responsible for as much as 37.7 µg/m³ of NO₂ pollution, or approximately 20 ppb—well above the SILs and above the levels at which EPA has found to result in adverse health impacts. Although those impacts do not occur at the precise time and location of modeled violations of the NAAQS, the SILs do not represent a threshold below which there is

¹⁰⁴ Authorization Order, 181 FERC ¶ 61,143 at P 63.

¹⁰⁵ Authorization Order, 181 FERC ¶ 61,143 at P 63, n.159 (*citing* Final EIS at 4-387 to 4-388). In the Final EIS, FERC’s discussion of air quality impacts to environmental justice communities is based on its evaluation of the Commonwealth LNG facility’s air quality impacts under the NAAQS. *See* EIS 4-387 to 4-388 (referencing Section 4.11.1, which “addresses” air quality impacts and concludes that Commonwealth’s contribution is “below” the significant impact level “at each exceedance location.” Final EIS at 4-231); *see also* 4-197 to 4-198.

zero-risk. In fact, EPA and courts have recognized that adverse effects from NO₂ may occur at any ambient concentration, and there is no “threshold” NO₂ concentration below which respiratory health effects do not occur.¹⁰⁶ Thus, even if Commonwealth LNG’s individual pollution impacts do not exceed the SIL at the precise time and location of any NAAQS exceedance, that does not demonstrate that the direct and cumulative effects of Commonwealth LNG’s air pollution on human health will be insignificant, or that such disproportionate impacts are not cause for concern.

EPA’s reliance on the SILs for NO₂ impacts also fails to address or evaluate environmental justice communities’ cumulative exposure to multiple pollutants. This risk of multiple exposure may not be captured by the NAAQS because EPA sets the NAAQS in a context of assessing “acceptable” risks, not eliminating all risk. *Murray Energy Corp. v. EPA*, 936 F.3d 597, 609 (D.C. Cir. 2019). Moreover, NO₂ pollution also contributes to the formation of harmful particulate matter and ozone pollution, for which EPA has similarly found that there are no zero-risk thresholds below which adverse health effects will not occur.¹⁰⁷ FERC’s myopic focus on the

¹⁰⁶ EPA Integrated Science Assessment for Oxides of Nitrogen—Health Criteria at 5-92 (Jan. 2016), available at <https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=310879>; see also NAAQS for Nitrogen Dioxide, 75 Fed. Reg. 6,474, 6,480, 6,500 (Feb. 9, 2010); *Am. Trucking Ass’n, Inc. v. EPA*, 283 F.3d 355, 359-360 (D.C. Cir. 2002) (NO₂ is recognized as a pollutant for which no threshold of exposure fully protects human health).

¹⁰⁷ EPA, Policy Assessment for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter at 3-25, 3-30, 3-31, 3-33, 3-51 (May 2022), available at <https://www.epa.gov/system/files/documents/2022->

SILs fails to account for the cumulative pollution impacts of NO₂, including ozone and particulate matter formation that may disproportionately affect environmental justice communities.

Despite those impacts and the widespread predicted exceedances of the NAAQS across the Lake Charles area, FERC failed to conduct no further analysis of adverse and disproportionate impacts on environmental justice communities. Nor did FERC give any “serious consideration of alternatives and mitigation actions in coordination with extensive community outreach efforts.”¹⁰⁸ In failing to do so, FERC arbitrarily and unlawfully failed to take a hard look at the impacts of Commonwealth’s significant air pollution on environmental justice communities, and whether those impacts could be avoided or minimized.¹⁰⁹

[05/Final%20Policy%20Assessment%20for%20the%20Reconsideration%20of%20the%20PM%20NAAQS_May2022_0.pdf](#); see also 80 Fed. Reg. 65,292, 65,355/2-3 (Oct. 26, 2015) (EPA’s ozone NAAQS); accord 80 ed. Reg. 65,334/2-3.

¹⁰⁸ EPA, *Final Guidance for Incorporating Environmental Justice Concerns in EPA’s NEPA Compliance Analyses* § 3.2.2. (Apr. 1998), available at https://www.epa.gov/sites/default/files/2015-02/documents/ej_guidance_nepa_epa0498.pdf (hereinafter “EPA EJ Guidance”).

¹⁰⁹ Cf. *Friends of Buckingham v. State Air Pollution Control Bd.*, 947 F.3d 68, 86, 92 (4th Cir. 2020) (finding the Board’s state law environmental justice analysis incomplete when it failed to consider “the potential degree of injury to the local population independent of NAAQS”); see also *Rise St. James et al. v. Louisiana Dep’t Envtl. Quality*, Docket No. 694,029, Sec. 27 (19th Dist. La. Sept. 8, 2022) (vacating a PSD permit and the agency’s environmental justice analysis, in part, based on the agency’s arbitrary reliance on SILs to conclude that no harm would occur, despite impacts below the SIL).

Third, courts have rejected the use of SILs as a blanket exemption from the requirement to fully evaluate and mitigate harmful air pollution impacts. The Clean Air Act requires Commonwealth LNG to demonstrate that emissions from the proposed LNG facility “will not cause or contribute” to “any” exceedance of the applicable air quality standard.¹¹⁰ It is clear—“no” means no¹¹¹—and, as shown by the repeated use of “any,” the statutory mandate must be given broad, sweeping effect.¹¹² Indeed, this is the very sort of “rigid” statutory language that forecloses *de minimis* exemptions.¹¹³ Reliance on SILs to avoid consideration of alternatives or minimize pollution impacts is also contrary to the core purposes of the Clean Air Act: to *prevent* incremental, cumulative additions of pollution from deteriorating air quality.¹¹⁴

¹¹⁰ 42 U.S.C. § 7475(a)(3)(A)-(B) (emphasis added).

¹¹¹ See *United States v. Clintwood Elkhorn Mining Co.*, 553 U.S. 1, 7 (2008).

¹¹² See *Consumer Electronics Ass'n v. FCC*, 347 F.3d 291, 298 (D.C. Cir. 2003) (“the Supreme Court has consistently instructed that statutes written in broad, sweeping language should be given broad, sweeping application.”); see also *Clintwood Elkhorn Mining*, 553 U.S. at 7 (“Five ‘any’s’ in one sentence and it begins to seem that Congress meant the statute to have expansive reach.”); *Massachusetts v. EPA*, 549 U.S. 497, 528-29 (2007) (“repeated use of the word ‘any’” demonstrated that statutory language was “sweeping” in its protective reach).

¹¹³ See *Public Citizen v. Young*, 831 F.2d at 1111-13 (quoting statutory language whose “natural—almost inescapable—reading” requires certain action and finding that language is rigid).

¹¹⁴ *Alabama Power*, 636 F.2d at 362.

Consistent with those principles and statutory text, in 2013, the D.C. Circuit vacated EPA’s SILs regulation for fine particulate matter (“PM_{2.5}”), recognizing EPA’s “lack of authority to exempt sources from the requirements of the Act.”¹¹⁵ The court specifically rejected the premise—which FERC erroneously adopts in its Authorization Order—that a source does not contribute to violations of the NAAQS simply because “a proposed source or modification’s air quality impact is below the SIL.” *Id.*¹¹⁶ FERC’s willingness to ignore adverse air pollution impacts to environmental justice communities based solely on the fact that Commonwealth’s contribution to NAAQS violations is estimated to be below the SILs is contrary to Clean Air Act precedent and arbitrary. This is especially true given the large predicted exceedances of the NO₂ NAAQS in the area surrounding the Commonwealth LNG facility, as discussed below.

Finally, even the SILs were relevant to FERC’s significance inquiry (and they are not), EPA has made clear that use of the SILs “may not be appropriate” and “misuse[d]” where, as here, modeling shows that the area is already exceeding the NAAQS.¹¹⁷ In such cases, “[a]dditional discretion may need to be exercised in such

¹¹⁵ *Sierra Club v. EPA*, 705 F.3d 458, 465–66 (D.C. Cir. 2013).

¹¹⁶ See also *Rise St. James et al. v. Louisiana Dep’t Envtl. Quality*, Docket No. 694,029, Sec. 27 (19th Dist. La. Sept. 8, 2022) (vacating a PSD permit and the agency’s environmental justice analysis, in part, based on the agency’s arbitrary reliance on SILs to conclude that no harm would occur, despite impacts below the SIL).

¹¹⁷ 75 Fed. Reg. 64,864, 64,894 (Oct. 10, 2020); EPA, *Guidance on SILs for Ozone and Fine PM in the PSD Program*, p. 3 (2018) (citing 75 FR 64864, 64892 and

cases to ensure that public health is protected.”¹¹⁸ That is because pollution increases within the SIL can still cause or contribute to nonattainment.¹¹⁹ By way of example, if a proposed source will emit NO₂ that has a potential contribution of 37.7 µg/m³, or more than 20% of the NAAQS (as the Commonwealth modeling projects),¹²⁰ it plainly has the potential to tip an area that is at or near the NAAQS (like Lake Charles) into nonattainment, and therefore adversely affect public health in those communities.

Moreover, for environmental justice communities in and around Lake Charles that are already violating or projected to violate the NAAQS, *any* increase in NO₂ will cause the violation to persist and make it harder to cure. Those very real, cumulative contributions to unhealthy air quality in environmental justice communities cannot be reasonably characterized as insignificant or *de minimis*,

Memorandum from Stephen D. Page, EPA OAQPS, to EPA Regional Air Division Directors, “Guidance for PM2.5 Permit Modeling,” May 20, 2014), available at https://www.epa.gov/sites/production/files/2018-04/documents/sils_policy_guidance_document_final_signed_4-17-18.pdf (attached).

¹¹⁸ NO₂ Modeling Guidance at 1, 10; *see also* EPA, Guidance Concerning the Implementation of the I-hour NO NAAQS for the Prevention of Significant Deterioration Program at 5 (June 29, 2010) (Where “the applicant can show that the NOx emissions increase from the proposed source will not have a significant impact at the point and time of any modeled violation, the permitting authority *has discretion* to conclude that the source’s emissions do not cause or contribute” to an exceedance of the NAAQS) (PSD Guidance).

¹¹⁹ See 75 Fed. Reg. at 64,892, 64,894/2.

¹²⁰ EIS at 4-227, Table 4.11.1-8; see also Final EIS, App’x I.

even if, for the purposes of PSD permitting evaluation, Commonwealth LNG itself is not projected to exceed the “significant impact level” at a violating modeling receptor location.¹²¹

But that is exactly what FERC’s use of the NO₂ SIL would do. As the record makes clear, air quality in the area surrounding Commonwealth LNG is expected to significantly exceed the NAAQS. In fact, FERC’s own modeling shows that the maximum 1-hour NO₂ concentration in the area is 229 µg/m³—exceeding the NAAQS by more than 20%. EIS at 4-229. That estimate almost certainly underestimates the extent and scope of NO₂ exceedances in the area. Using Commonwealth LNG’s own PSD modeling inputs, and after expanding the size of the receptor grid and number of receptors in the area, Wingra Engineering conducted an updated, independent modeling analysis demonstrating a maximum NO₂ concentration of 1,537 µg/m³ in Cameron and Calcasieu Parishes—approximately eight times the NAAQS.¹²²

¹²¹ EPA guidance indicates that “the significant contribution analysis should be based on a source’s contribution to the modeled violation paired in time and space.” EPA, Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO₂, National Ambient Air Quality Standard at 3 (Mar. 1, 2011) (hereinafter “NO₂ Modeling Guidance”).

¹²² Modeling Comments of *Steven Klafka, P.E., BCEE, Wingra Engineering, S.C.*, Commonwealth LNG Commonwealth Parish, Louisiana, Evaluation of Compliance with the 1-hour NAAQS for NO₂ (Mar. 18, 2022) (Klafka Report), filed in this docket as an attachment to Sierra Club et al. Comments on DEIS, Accession 20220525-4151 (starting at pdf page 119 of 131 of the attachment “Sierra Club PSD Comments”). Moreover, as discussed in the technical report of Dr. Ron Sahu, Commonwealth has almost certainly underestimated its projected emissions, and therefore Commonwealth’s air quality modeling almost certainly underestimates

In sum, FERC failed to take a hard look at the adverse health or environmental effects of the Commonwealth LNG project on minority and low-income populations, as required under NEPA and Commission precedent. As the record demonstrates, Commonwealth LNG's emissions, together with other sources in the region, will contribute to significant exceedances of the NAAQS, and a "majority of these potential exceedances within the modeled area would be within environmental justice communities," including a community just 0.1 mile away from the facility.¹²³ Moreover, FERC's own modeling shows that Commonwealth LNG, by itself, will cause NO₂ pollution impacts to adjacent communities that do exceed the SIL and the levels at which harm to public health, especially sensitive populations, may occur. Under these circumstances, FERC's reliance on the SIL to

the impact of those emissions. Exhibit A, Comments of Dr. Ranajit (Ron) Sahu, PhD, QEP, CEM, and Ms. Vicki Stamper, Initial Title V Operating Permit No. 0560-00997-V0 and Prevention of Significant Deterioration Permit PSD-LA-841 For the Commonwealth LNG LLC Facility, Cameron Parish, Louisiana (Sahu Report). As detailed in the Sahu Report, Commonwealth LNG's PSD analysis repeatedly and systematically relied on generic, unsupported, and unlawful emission factors that operate to minimize Commonwealth LNG's projected total emissions, including its projections of NOx emissions. As a result of those generic emission factors, it is difficult to quantify precisely the extent to which the facility's emissions will exceed the assumptions Commonwealth used in its modeling—but as Dr. Sahu explains, those actual emission will certainly will be higher than Commonwealth suggests. And given that Commonwealth LNG's own modeling indicated that Commonwealth LNG's NO₂ impacts are just narrowly below the 7.5 µg/m³ SIL, FERC's reliance on the SILs is inappropriate.

¹²³ Authorization Order at P 50.

conclude that Commonwealth LNG will nevertheless have insignificant impacts to such communities is arbitrary.

B. The Commission’s environmental justice analysis is problematic and not comport with the “hard look’ NEPA requires, and the Project’s related environmental justice impacts are inconsistent with the public interest.

“[E]nvironmental justice is not a merely box to be checked[.]”¹²⁴ Here FERC’s EIS does just that; supplanting one conclusion that a particular class of impact is significant¹²⁵ for a true, adequately-scoped, holistic hard look at environmental justice impacts.

FERC should actually disclose the actual health impacts that communities could face related to a project and its pollutants. In conducting NEPA reviews of proposed natural gas projects, FERC follows the instruction of Executive Order 12898, which directs federal agencies to identify and address “disproportionately high and adverse human health or environmental effects” of their actions on minority and low-income populations (i.e., environmental justice communities). If the Project could lead to adverse health impacts or effects, FERC should spell those impacts out in its EIS. FERC staff appear to acknowledge that the classes of emissions that Commonwealth LNG will emit can indeed have health-related impacts to humans, and that ‘NAAQS attainment alone may not ensure there is no localized harm to such populations due to project emissions of volatile organic

¹²⁴ *Friends of Buckingham*, 947 F.3d 68, 92 (4th Cir. 2020).

¹²⁵ Authorization Order at P 26.

compounds, hazardous air pollutants, as well as issues such as the presence of non-project related pollution sources, local health risk factors, disease prevalence, and access (or lack thereof) to adequate care.” EIS at 4-198. We agree with this acknowledgement, but find that FERC’s own admission of the fact that NAAQS attainment does not inherently correlate with a conclusion that related health impacts of pollutants are “cured” highlights a glaring error with FERC not expressly disclosing related health effects and impacts associated with a project, and is particularly problematic as area cancer and asthma rates are well above the national average.¹²⁶ There is no reason why FERC’s environmental justice analysis in this (and previous) EISes need not include some disclosure of the actual impacts to human health that project air pollutants could cause, and doing so would be wholly consistent with FERC’s duties under NEPA to take a hard look at potential, reasonably foreseeable environmental impacts.¹²⁷ Simply *disclosing* related health risks associated with project pollutants would more comport with that duty than

¹²⁶ See Authorization Order, 181 FERC ¶ 61,143 (Glick, Chairman, concurring at P 5) (*citing* Kimberly A. Terrell & Gianna St. Julien, *Air Pollution Is Linked to Higher Cancer Rates Among Black or Impoverished Communities In Louisiana*, Environ. Res. Lett. 17 (Jan. 2022), available at: <https://iopscience.iop.org/article/10.1088/1748-9326/ac4360/pdf>, attached).

¹²⁷ Compare with EIS at 4-117, where the Commission analyzes physiological effects of construction-related dredging on fish. “Potential physiological effects include mechanical abrasion of surface membranes, delayed larval and embryonic development, reduced bivalve pumping rates, and interference with respiratory functions. Possible behavioral effects from increased turbidity include interference with feeding for sight-foraging fish and area-avoidance.” Similar analysis could be done for the physiological effects of related project pollutants for human health.

merely acknowledging that NAAQS attainment does not mean that a project will not impact human health, as the FERC did here.

FERC's EIS correctly found that due to the presence of significant visual impacts on an environmental justice community and overall cumulative impacts in the project area, impacts on environmental justice communities would be disproportionately high and adverse. EIS at 5-415. Relatedly, environmental condition 1 in the appendix of the order requires Commonwealth LNG to implement the mitigation measures described in the "Commonwealth Facility Lighting Plan¹²⁸" and requires it to plant native sugarberry (*Celtis laevigata*) trees of 15-25-gallon size on 15-foot centers approximately 30 feet inside Commonwealth LNG's exclusion fence for approximately 150 feet on the upland chenier area (i.e., their typical landscape position). FERC notes that "although these trees will provide some level of visual screening, the mature height of the native trees of the Chenier Plain is relatively low compared to the LNG facility's structures, which will still be visible" and that "although Commonwealth is required to implement the mitigation described above, significant direct and cumulative visual impacts would still occur and cumulative visual impacts on environmental justice communities would remain disproportionately high and adverse.¹²⁹

The disproportionately high and adverse visual impacts are but one more indication that the Project will have deeply negative impacts on the environmental

¹²⁹ See Authorization Order at P 72.

justice communities surrounding the project area, and that the project is squarely contrary with the public interest, in violation of the NGA. Furthermore, while FERC is correct in characterizing visual impacts as disproportionately high and adverse, it can only characterize the Project impacts that it considers and discloses—FERC’s overall environmental justice analysis remains unlawfully meager despite NRDC’s and others’ DEIS comments requesting more robust review. Related to environmental justice impacts, the EIS falls short of NEPA’s mandate that FERC take a hard look at Project impacts. Ultimately, because FERC’s analysis of the Project’s impacts on environmental justice communities was deficient, FERC must also revisit its determinations of public interest and convenience under Sections 3 of the NGA.¹³⁰

V. SPECIES

A. The EIS fails to take a hard look at the impacts of pile driving activities on the Lake Calcasieu stock of bottlenose dolphins, in violation of NEPA.

FERC’s review of Commonwealth LNG’s impacts on bottlenose dolphins violates both NEPA and the NGA. in various ways. First, FERC violated NEPA by depriving the public of a meaningful opportunity comment on the impacts by failing to properly introduce these impacts in the DEIS. Second, FERC’s failure to properly take a hard look at the Project’s impact on bottlenose dolphins poisoned FERC’s Section 3 NGA analysis. We address both issues below.

¹³⁰ See *Vecinos para el Bienestar de la Comunidad Costera v. FERC*, 6 F.4th 1321, 1331 (D.C. Cir. 2021).

182 FERC ¶ 62,033
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Commonwealth LNG, LLC

Docket No. CP19-502-002

NOTICE OF DENIAL OF REHEARING BY OPERATION OF LAW AND
PROVIDING FOR FURTHER CONSIDERATION

(January 19, 2023)

Rehearing has been timely requested of the Commission's order issued on November 17, 2022, in this proceeding. *Commonwealth LNG, LLC*, 181 FERC ¶ 61,143 (2022). In the absence of Commission action on a request for rehearing within 30 days from the date it is filed, the request for rehearing may be deemed to have been denied. 15 U.S.C. § 717r(a); 18 C.F.R. § 385.713 (2021); *Allegheny Def. Project v. FERC*, 964 F.3d 1 (D.C. Cir. 2020) (en banc).

As provided in 15 U.S.C. § 717r(a), the request for rehearing of the above-cited order filed in this proceeding will be addressed in a future order to be issued consistent with the requirements of such section. As also provided in 15 U.S.C. § 717r(a), the Commission may modify or set aside its above-cited order, in whole or in part, in such manner as it shall deem proper.

Debbie-Anne A. Reese,
Deputy Secretary.

**19TH JUDICIAL DISTRICT COURT
PARISH OF EAST BATON ROUGE
STATE OF LOUISIANA**

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|---|-----------------|
| SIERRA CLUB, | * |
| | * |
| Petitioner, | * NUMBER _____ |
| | * |
| v. | * DIVISION_____ |
| | * |
| LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY, | * JUDGE _____ |
| | * |
| Defendant. | * |
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PETITION FOR JUDICIAL REVIEW

1. Sierra Club appeals the final decision by the Louisiana Department of Environmental Quality (“LDEQ”), made on March 28, 2023, granting Prevention of Significant Deterioration Permit PSD-LA-841 and Title V/Part 70 Air Operating Permit 0560-00997-V0 (collectively, “Permits”) to Commonwealth LNG, LLC (“Commonwealth”) to construct and operate a new “liquefied natural gas” (“LNG”) production and export facility (“LNG facility”) in Cameron Parish.¹

2. As detailed below, Sierra Club asks the Court to vacate LDEQ’s decision to issue the Permits because the decision violates the federal Clean Air Act, Louisiana Environmental Quality Act, Louisiana air regulations, and article IX, section 1 of the Louisiana Constitution, as well as the other legal provisions specified in this Petition.

¹ Sierra Club is simultaneously filing a petition for review in the U.S. Court of Appeals for the Fifth Circuit challenging LDEQ’s issuance of the same air Permits. Under the Natural Gas Act, 15 U.S.C. § 717r, the Fifth Circuit has exclusive jurisdiction over the review of any final action of a state administrative agency acting pursuant to Federal law to issue, condition, or deny any permit for the construction or operation of a liquefied natural gas facility used, among other things, to load, store, transport, gasify, liquefy, or process natural gas for export. However, Sierra Club is protectively filing this petition within the 30-day limitations period for review under La. R.S. §§ 30:2050.21(A), 2050.23(D), to preserve this Court’s jurisdiction in the event the Fifth Circuit determines it does not have jurisdiction. Sierra Club intends to file a motion seeking to hold this protective petition for review in abeyance until the Fifth Circuit resolves any dispute between the parties as to jurisdiction or the merits. Cf. *Eagle-Picher Indus. v. EPA*, 759 F.2d 905, 912 (D.C. Cir. 1985) (“[W]e have previously admonished petitioners of the wisdom of filing protective petitions for review.”).

LATHAM & WATKINS LLP

July 22, 2022

*VIA ELECTRONIC FILING***FIRM / AFFILIATE OFFICES**

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Kimberly D. Bose, Secretary
 Federal Energy Regulatory Commission
 888 First Street, N.W.
 Room 1A, East
 Washington, D.C. 20426

Re: Venture Global CP2 LNG, LLC and Venture Global CP Express, LLC
 Docket Nos. CP22-21-000 and CP22-22-000
 Supplemental Response to Environmental Information Request No. 3

Dear Secretary Bose:

On December 2, 2021, Venture Global CP2 LNG, LLC and Venture Global CP Express, LLC (together, the “Applicants”) filed in these proceedings, pursuant to Sections 3 and 7 of the Natural Gas Act, as amended, and Parts 153 and 157 of the regulations of the Federal Energy Regulatory Commission (“Commission”) respectively, a joint application for authorization to construct, install, own, operate and maintain certain liquefied natural gas facilities located in Cameron Parish, Louisiana and certain pipeline facilities located in Louisiana and east Texas (the “Projects”).

The Commission Staff issued its Environmental Information Request No. 3 (“EIR No. 3”) in this proceeding on July 15, 2022. On July 21, 2022, the Applicants filed their initial response to EIR No. 3. Attached are the Applicants’ first supplemental response to EIR No. 3. This supplemental information is filed under oath pursuant to 18 C.F.R. § 385.2005 by the named individuals identified as respondents to each request.

This filing is submitted in two Volumes. Public Volume I contains this transmittal letter and public responses. Volume II contains cultural resources information that is privileged and confidential (“Privileged”). The undersigned requests, pursuant to 18 C.F.R. § 388.112, that the

Kimberly D. Bose, Secretary
Docket Nos. CP22-21-000 and CP22-22-000
July 22, 2022

information in Volume II not be released to the public. All Privileged materials have been labeled in accordance with the Commission's regulations.

The Applicants respectfully renew their request that the Commission issue as soon as possible a revised schedule for the issuance of the draft and final EIS for the Projects, and that it minimize the length of any delay in the previous schedule.

Pursuant to 18 C.F.R. § 385.2010, this filing is being served on each person on the official service list for this proceeding. If you have any questions regarding this filing, please contact either of the representatives listed below.

Respectfully submitted,

/s/ J. Patrick Nevins

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Carlos E. Clemente

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Counsel to:
Venture Global CP2 LNG, LLC and
Venture Global CP Express, LLC

cc: Kylee Ferrara, FERC Staff
All parties on the official service list



Venture Global CP2 LNG, LLC and Venture Global CP Express, LLC
Response to OEP/DG2E/Gas Branch Environmental Information Request (EIR)
Issued July 15, 2022 in Docket Nos. CP22-21-000 and CP22-22-000
CP2 LNG and CP Express Project (Project)

General

1. As stated in the cover letter, provide responses to all comments filed in the Environmental Information Requests (EIRs) issued February 11 and April 11, 2022 that were omitted from the response to EIR dated March 4, March 31, April 22, May 2, May 20, June 13, June 30, and July 13, 2022 or provide a projected filing date as indicated below, including the following:
 - a. Provide details regarding CP2 LNG's proposed carbon capture and sequestration (CCS), including the following information. If details are pending, provide a projected filing date:
 - i. a description and location of all associated facilities (e.g., capture equipment, sequestration wells, and pipeline);
 - ii. description of impacts on land use type and acreage, water resources (including number of impacted waterbodies), safety, air and noise, and any other impacted resources;
 - iii. any permits that would be required and ensure an updated table 1.9-1 is provided; and
 - iv. provide all correspondence with permitting agencies, as applicable, regardless as to whether consultations are ongoing.

Response 1-a:

As noted in CP2 LNG's Application, the CCS facilities are not within the Commission's Natural Gas Act (NGA) jurisdiction; CP2 LNG will pursue all necessary regulatory authorizations for this aspect of the Project as the Commission's processing of the Application progresses.

Of course, CO₂ is not "natural gas" within the meaning of the term in the NGA, nor is it oil or a similar hydrocarbon liquid subject to regulation under the Interstate Commerce Act; thus, the Commission has no statutory basis for asserting jurisdiction over CP2's planned CCS facilities.¹ The recent report to the U.S. Congress by the White House Council on Environmental Quality regarding Carbon Capture, Utilization, and Sequestration provides an inventory of existing permitting requirements for CCS deployment and identifies best practices for advancing the

¹ See *Cortez Pipeline Co.*, 7 FERC ¶ 61,024 (1979) (holding that CO₂ is not "natural gas" under the NGA and disclaiming jurisdiction over CO₂ pipeline) and *Cortez Pipeline Co.*, 45 Fed. Reg. 85,177 (1980) (holding by the Commission's predecessor, the Interstate Commerce Commission, reaching the same conclusion under the Interstate Commerce Act).



efficient, orderly, and responsible development of CCS projects at increased scale.² Notably, the report does not identify any role for this Commission in that area.

The CCS facilities will be subject to regulation by the U.S. Environmental Protection Agency (EPA), which requires an Underground Injection Control (UIC) Class VI permit for the geological sequestration, as well as other Federal and State agencies (as detailed in attachment General 1-a). Therefore, there also is no need for Commission jurisdiction over the proposed CCS facilities.

Furthermore, as an analogous example, the Commission recently considered an application to modify the approved design and operation of an LNG export facility to incorporate systems to extract helium from the boil-off gas pipeline of the LNG terminal's pretreatment facility.³ In authorizing the modifications, the Commission held specifically that the jurisdictional aspects of the facilities proposed were limited to the tie-in points to LNG pretreatment facility, as opposed to the entirety of the proposed helium extraction facility.⁴ Similarly here, the jurisdictional aspects of the CCS facilities are limited to the tie-ins to the Commission-jurisdictional facilities.

- i. The Carbon Capture and Sequestration (CCS) Project (CCS Project) will capture carbon dioxide from the CP2 LNG Terminal and transport it for injection into a subsurface saline aquifer for permanent storage. As a voluntary investment commitment without regard for Best Available Control Technology (BACT) mitigation, the CCS Project will capture and sequester an estimated 500,000 tons per year of carbon dioxide emissions from CP2 LNG Terminal operations.

The CCS system will be located within and outside of the Terminal. Detailed engineering is ongoing for the CCS system; an overview of the design is provided below.

Facilities within the Terminal Site

The carbon capture equipment will be within the Terminal site. The equipment will route carbon dioxide from the Acid Gas Removal Unit (AGRU) vent stream to three electric-driven compressors with interstage coolers and vessels for water knock-out. After compression to super-critical pressure, pumps will raise the pressure sufficient to enter a pipeline for transport offsite. An aeroderivative simple cycle combustion turbine will be installed as part of the Terminal's electric generation facilities to provide the additional electric capacity required to operate the CCS Project's three electric equipment units.

Facilities outside of the Terminal Site

It is anticipated that the carbon dioxide send-out pipeline will be installed via horizontal

² Council on Environmental Quality June 30, 2021 Report to Congress on Carbon Capture, Utilization, and Sequestration - Delivered to the Committee on Environment and Public Works of the Senate and the Committee on Energy and Commerce, the Committee on Natural Resources, and the Committee on Transportation and Infrastructure of the House of Representatives, as directed in Section 102 of Division S of the Consolidated Appropriations Act, 2021 available at

<https://www.whitehouse.gov/wp-content/uploads/2021/06/CEQ-CCUS-Permitting-Report.pdf>.

³ Freeport LNG Development, L.P., 175 FERC ¶ 61,237 (2021).

⁴ *Id.* at P 19.



directional drill (HDD) under the southern portion of the Terminal's floodwall. The carbon dioxide pipeline will continue south approximately 3 miles to an offshore platform in State of Louisiana waters. The wellhead for the EPA UIC Class VI injection well will be at the platform, where the carbon dioxide will be injected into underground pore space that is expected to be authorized for use via an operating agreement that has been negotiated with the State of Louisiana for permanent storage and which is expected to receive final state approval in the coming months. The pipeline alignment, platform location, and well location are in the siting stage of project development.

- ii. Impacts on land use type and acreage, water resources, and air for facilities within the CP2 LNG Terminal were previously addressed in impact tables provided to FERC. Noise generated by operation of the CCS equipment within the Terminal will be incorporated into the Terminal's noise modeling report.

The initial portion of the carbon dioxide pipeline will be installed via HDD, which will extend from the entry point within the floodwall to an exit point south of the beach and within the Gulf of Mexico. The nearshore drilled pipeline will tie into the offshore conventionally laid carbon dioxide pipeline. Except for the CCS Project components within the Terminal and the offshore platform, no other CCS system components will be located on the surface, minimizing permanent land use impacts during operations.

Impacts outside the Terminal site cannot be further described at this time. The pipeline alignment, platform location, and well location are in the siting stage of project development. Impacts on land use type and acreage, water resources, air, and noise will be reviewed under the CCS Project permitting (see attachment General 1-a).

- iii. A preliminary permit table for the CCS Project is provided as attachment General 1-a. The CCS Project will not change CP2 LNG's regulatory authorizations because components of the CCS Project within the Terminal Site require no change or modification to the CP2 LNG permit applications. The additional aeroderivative simple cycle combustion turbine required to provide electric capacity for the electric-driven CCS compressors is included in the CP2 LNG Terminal's air permit application, which is planned for submittal to the Louisiana Department of Environmental Quality (LDEQ) by July 29, 2022 and will be provided to FERC promptly thereafter.
- iv. CP2 LNG will begin consultations with agencies in the third quarter of 2022 for the CCS Project. The operating agreement with the Louisiana Department of Natural Resources for the subsurface pore space is expected to be finalized before the end of 2022.

Attachment:

General 1-a, CCS Project Permits, Approvals, and Consultations Table



Federal Energy
Regulatory
Commission

**Office of
Energy Projects**

FERC/FEIS-0333

July 2023

CP2 LNG and CP Express Project

FINAL ENVIRONMENTAL IMPACT STATEMENT

Venture Global CP2 LNG, LLC

Docket No. CP22-21-000

Venture Global CP Express, LLC

Docket No. CP22-22-000

Abstract:

The staff of the Federal Energy Regulatory Commission (Commission) prepared a final environmental impact statement (EIS) for the CP2 LNG and CP Express Projects proposed by Venture Global CP2 LNG, LLC (CP2 LNG) and Venture Global CP Express, LLC (CP Express). CP2 LNG and CP Express are seeking authorization to construct, install, own, operate, and maintain certain liquefied natural gas (LNG) facilities in Cameron Parish, Louisiana and certain pipeline facilities in Cameron and Calcasieu Parishes, Louisiana and Jasper and Newton Counties, Texas. CP2 LNG states that the purpose of the proposed project is to liquefy, store, and export a nameplate liquefaction capacity of 20 million tonnes per annum (MTPA) of LNG, with approximately 28.0 MTPA capacity possible under optimal conditions, to overseas markets by ocean-going vessels. CP Express states that the purpose of the pipeline system (about 91 miles) is to create the firm transportation capacity needed to transport 4.4 billion cubic feet per day of feed gas required for the proposed LNG export operations from natural gas supply points in east Texas and southwest Louisiana to the Terminal Facilities. CP2 LNG and CP Express proposed impact avoidance, minimization, and mitigation measures and Commission staff recommend additional measures in this EIS. Commission staff conclude that construction and operation of the project would result in adverse environmental impacts. For most resources, impacts on the environment would be less than significant. Commission staff determined that construction and operation of the project would have significant adverse effects on the visual resources of the surrounding areas, including cumulative visual impacts, and visual impacts on environmental justice communities in the region. Lastly, climate change impacts are not characterized in the EIS as significant or insignificant.

Estimate of Staff's Time Spent in Preparation of this EIS: \$303,015.00

Cooperating agencies cost: \$15,667.00

There were no direct contract costs.

Contact: Office of External Affairs, (866) 208-FERC

Federal Energy Regulatory Commission

Office of Energy Projects

Washington, DC 20426

Cooperating agencies:



U.S. Department
of Energy



U.S. Army
Corps of Engineers



U.S. Coast Guard



National Oceanic
Atmospheric Administration -
National Marine Fisheries Service



U.S. Department
of Transportation

Traffic Study provided in response to our recommendation in the draft EIS and CP2 LNG's Traffic Management Plan (see section 4.10.8.1).

Operation of the Project would have a minor positive effect on the local governments' tax revenues due to the increase in property taxes that would be collected. Operation of the Terminal Facilities would have permanent but minor impacts on roadway transportation and operation of the Pipeline System would not result in significant impacts on traffic or roadways.

During the draft EIS comment period, we received several comments from individuals expressing concern regarding the impact of the Project on commercial fisheries and shrimping. Based on consultations between FERC and LDWF, impacts on shrimping vessels would be greatest near the Terminal south of the Firing Line where shrimping occurs year-round and vessel traffic and dredging associated with the Terminal Facilities would occur. CP2 LNG committed to continuing the development of an Engagement Plan for Local Commercial Shrimp Fishery⁹ to minimize impacts on shrimping vessels and would provide updates on its engagement effort and on Community Advisory Group meetings within the monthly construction reports.

Environmental Justice

The proposed Project would have a range of impacts on the environment and on individuals living in the vicinity of the Project facilities, including environmental justice populations. Seventeen block groups out of 31 block groups within the geographic scope of the Project are environmental justice communities. Of the 17 block groups, five block groups¹⁰ within the Project's area of review are identified as environmental justice communities based on the minority population that either exceeds 50 percent or is meaningfully greater than their respective counties/parishes. Eight block groups¹¹ within the Project's area of review are identified as environmental justice communities based on a low-income population that is equal to or greater than their respective counties/parishes. Four block groups¹² within the Project's area of review have both minority and low-income populations that are equal to or greater than their respective counties/parishes. For the Terminal Facilities, six block groups (two based on the minority threshold alone [CT 9701.02, BG 1 and CT 9701.01, BG 1] three based on the low-income threshold alone [CT 9702.02, BG 2; CT 9701.01, BG 2; CT 9702.03, BG 2] and one based on both the minority and low-income thresholds [CT 9702.03, BG 1]) out of eight are considered environmental justice block groups. For the CP Express Pipeline and Enable Gulf Run Lateral, six block groups (one based on the minority threshold alone [CT 9701.02, BG 1] and five based on the low-income threshold alone [CT 9701.01, BG 2; CT 9702.02, BG 2; CT 34, BG 1; CT 9504, BG 1; CT 36.02, BG 1]) out of 15 are considered environmental justice block groups. For the contractor yards, six of the block groups (three based on the low-income threshold alone [CT 34, BG 1; CT 35, BG 2; and CT 35, BG 4], two based on the minority threshold alone [CT 16, BG 3 and CT 17, BG 4], and one based on both the minority and low-income thresholds [CT 16, BG 1]) are considered environmental justice block groups. The Moss Lake Compressor Station is within one mile of only one block group (CT 32, BG 2), which is not considered an environmental justice community. For the meter stations, three block groups (one based on the minority threshold alone [CT 35, BG 1] and two based on the low-income threshold alone [CT 9702.02, BG 2 and CT 36.02, BG 1]) out of eight are considered environmental justice block groups. For the three park and ride locations, all four of the block groups (one based on the low-income threshold alone [CT 9702.02, BG 2] one based on the

⁹ See attachment EIR 10 Socioeconomics-2 at accession number 20230522-5195.

¹⁰ Census Tract (CT) 35, Block Group (BG) 1; CT 9701.01, BG 1; CT 9701.02, BG 1; CT 16, BG 3; and CT 17, BG 4

¹¹ CT 34, BG 1; CT 36.02, BG 1; CT 9504, BG 1; CT 9701.01, BG 2; CT 9702.02, BG 2; CT 9702.03, BG 2; CT 35, BG 2; and CT 35, BG 4

¹² CT 9702.03, BG 1; CT 17, BG 5; CT 17, BG 6; and CT 16, BG 1

2.1.1.4 Flare System

At the Terminal Site, CP2 LNG would install a warm/cold flare structure approximately 197-feet-tall containing two separate flare headers to handle cold relief fluids and wet/warm relief fluids, a low-pressure vent flare structure approximately 70 feet tall for low-velocity, low pressure flaring, and a marine vapor control unit for marine flaring activities. More information regarding flaring is provided in sections 4.11 and 4.12.

2.1.1.5 Storm Protection and Stormwater Drainage Systems

CP2 LNG would construct a storm protection system to encompass the majority of the Terminal Facilities. Perimeter steel floodwalls would be constructed to protect the site against storm surge and potential wave action, as shown in figure 2.1-1. Further information regarding the storm protection system of the Terminal Facilities is provided in section 4.12.

Stormwater from the main plant area would be discharged to receiving waters near the Terminal Site. LDEQ would regulate the outfalls under the Louisiana Pollutant Discharge Elimination System (LPDES) program, as further discussed in section 4.4.2.1.

2.1.1.6 Carbon Capture and Sequestration Facilities

CP2 LNG would construct a system that contains equipment to capture and sequester an estimated 500,000 tons per year of CO₂ emissions for transport and injection into saline aquifers.³⁶ The CCS system would be within and outside of the Terminal Site.

The carbon capture equipment within the Terminal Site would route CO₂ from the acid gas removal unit vent stream to three electric-driven compressors with interstage coolers and vessels for water knock-out. After compression to supercritical pressure, pumps would raise the pressure sufficient to enter a pipeline for transport offsite. CP2 LNG would install an aeroderivative simple cycle combustion turbine as part of the Terminal Site's electric generation facilities to provide the additional electric capacity required to operate the three electric equipment units associated with the CCS system.

The CCS facilities described above would be subject to regulation by the EPA as well as other federal and state agencies. For purposes of our NEPA analysis, we evaluate the CCS facilities within the footprint of the LNG Terminal as FERC jurisdictional components of the Project. CCS Facilities outside of the Terminal Site are evaluated as non-FERC jurisdictional facilities in this EIS, and are described further in section 1.4.

2.1.1.7 Buildings and Facility Roads

The Terminal Facilities would include separate permanent buildings for administration, control rooms, a workshop, a warehouse, electrical equipment, and other support structures. The Terminal Site would be accessed by road from Lake Charles via SH 27 from either the east or the west, connecting to Davis Road. No access roads would be constructed for the Terminal Site.

³⁶ The wellhead for the injection well will be at the platform, where the carbon dioxide will be injected into underground pore space that is expected to be authorized for use via an operating agreement that has been negotiated with the State of Louisiana for permanent storage; final approval with the state is pending.

CERTIFICATE OF SERVICE

I hereby certify that on this 20th day of October, 2023, I electronically filed the foregoing Joint Appendix with the Clerk of the Court using the CM/ECF system, which will send notice of such filing to all registered CM/ECF users.

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